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FOREST STATISTICS
FOR THE
PIEDMONT OF VIRGINIA, 1957

by

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Division of Forest Economics



U. S. Department of Agriculture
Forest Service

Southeastern Forest Experiment Station

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in cooperation with the
Virginia

Department of Conservation and Development
Division of Forestry

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FOREWORD

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act through the Regional Forest Experiment Stations. In the southeastern states the Forest Survey is an activity of the Division of Forest Economics, Southeastern Forest Experiment Station, Asheville, North Carolina.

The five-fold purpose of the Forest Survey is (1) to make a field inventory of the present supply of standing timber, (2) to ascertain the rate at which this supply is being increased through growth, (3) to determine the rate at which it is being reduced through industrial and domestic uses, fire, and other causes, (4) to determine the present consumption and the probable future trend in requirements for forest products, and (5) to interpret and correlate these findings to aid in the formulation of private and public policies regarding forest land management.

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Camp Manufacturing Company	Johns-Manville Products Corp.
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FOREST STATISTICS FOR THE PIEDMONT OF VIRGINIA, 1957

Piedmont Virginia is a tapering wedge of land slightly more than 10 million acres in extent occupying the central portion of the State between the Coastal Plain in the east and the Blue Ridge in the west (fig. 1). The topography throughout most of the region is rolling, becoming moderately hilly to mountainous on the western edge. The James River divides the Piedmont into northern and southern subregions.

A survey of the forest resources of Virginia was started in the spring of 1956 to obtain current statistics on forest area, timber volume, growth, and amount of timber cut. Work in the Coastal Plain was completed in the fall of 1956 and in the Piedmont early in 1957. This progress report is the second to be issued for the State. Some statistics are shown separately for the Southern Piedmont and Northern Piedmont areas, designated as Survey Units 2 and 3 respectively.

An earlier survey made in 1940 provides a base for determining trends which have had an effect on the forest resource. Comparisons of forest land area and timber volumes which follow are made to point out important changes which have taken place during the 17-year period between surveys.

PRESENT FOREST CONDITIONS AND CHANGES SINCE 1940

More land area in forest.--Forest lands in the Virginia Piedmont have increased about 459,000 acres, or 8 percent, since 1940 (table A). The change is attributed mainly to the reversion of former agricultural lands to forest. Agricultural lands decreased about 565,000 acres, or 14 percent, during the 17-year period. Forest area increased 10 percent in the Southern Piedmont as land in agricultural uses dropped 19 percent. North of the James River forest lands expanded by 5 percent while agricultural lands dropped 10 percent. A small increase in area of large reservoirs accounted for a slight decrease in the combined area of land and small bodies of water.

Expansion of urban areas, suburban development, and construction of highways and defense installations have brought the area in these uses up 58 percent since 1940. This expansion has been greatest in the vicinity of Washington, D. C., but is noticeable throughout the Piedmont.

A shift of 47,000 acres from commercial forest to noncommercial forest is about equally attributed to inclusion of more forest area in public parks and classification of a few steep, rocky areas along the edge of the Blue Ridge as nonproductive forest land. Noncommercial forest area now amounts to a little over 2 percent of the forest area in the Piedmont.

Table A.--Changes in land use, 1940 to 1957

Land-use class	1940	1957	Change	
	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Percent</u>
Forest land:	5,932	6,391	+459	+8
Commercial	5,828	6,240	+412	+7
Noncommercial	104	151	+47	+45
Agricultural lands	3,906	3,341	-565	-14
Marsh and small water areas ^{1/}	43	35	-8	-19
Urban and other land areas	186	293	+107	+58
Total	10,067	10,060	-7	0

^{1/} Includes small bodies of water reported as land by the U. S. Bureau of the Census.

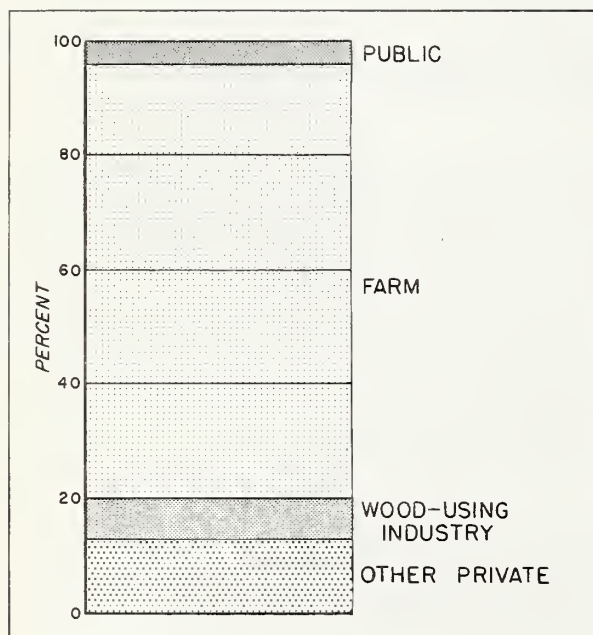


Figure 2.--Commercial forest ownership in the Virginia Piedmont, 1957.

Three-fourths of commercial forest is on farms.--Private farms include 76 percent of the commercial forest area in the Piedmont (fig. 2). Farm ownership data were not collected in the 1940 survey, but Bureau of the Census figures indicate a general decrease in area of farm ownership. Census of Agriculture data for 1939 and 1954 show a decrease of 10.4 percent in total land in farms and a drop of 3.4 percent in farm woodland area.

Commercial forest land in public ownership now makes up about 4 percent of the total for the Piedmont compared to about $2\frac{1}{2}$ percent in 1940. Nearly all of the increase has been in Federal lands obtained for use as defense installations.

Private ownerships other than farms include 1,282,700 acres, or about one-fifth of the commercial forest area in the Piedmont. Only about one-third of this area is owned by wood-using industries. This is the reverse of the situation in the Virginia Coastal Plain where wood-using industries own two-thirds of private forest land not in farms. Private forest land not in farms has increased 17 percent since 1940. This estimate is based on use of 1939 and 1954 Census of Agriculture figures for farm woodland areas and the 1940 and 1957 Forest Survey data for areas in public ownership.

Volume of growing stock per acre of commercial forest land averages about 1,800 board-feet, 745 cubic feet, or $10\frac{1}{2}$ cords. Volume per acre is slightly heavier in the Northern Piedmont than in the Southern Piedmont. Sawtimber volume per acre averages about 2,400 board-feet on public lands, 2,050 on lands owned by wood-using industries, and 1,750 on farm and other private ownerships. Percentage of softwood volume in the stands is highest on public lands with 40 percent, next on wood-using industry lands with 30 percent, and lowest on farm and other private lands with 25 percent.

Upland hardwood type increases nearly one-half million acres.--
The only sizable change in area by forest type since 1940 is in the upland hardwood type which increased 461,000 acres, or 17 percent (fig. 3). Combined area of pine and pine-hardwood types shows little change from the 1940 level. Within the pine types a slight shift has developed toward Virginia pine. Its area has increased by 4 percent while the area of loblolly and shortleaf pine types has dropped 8 percent.

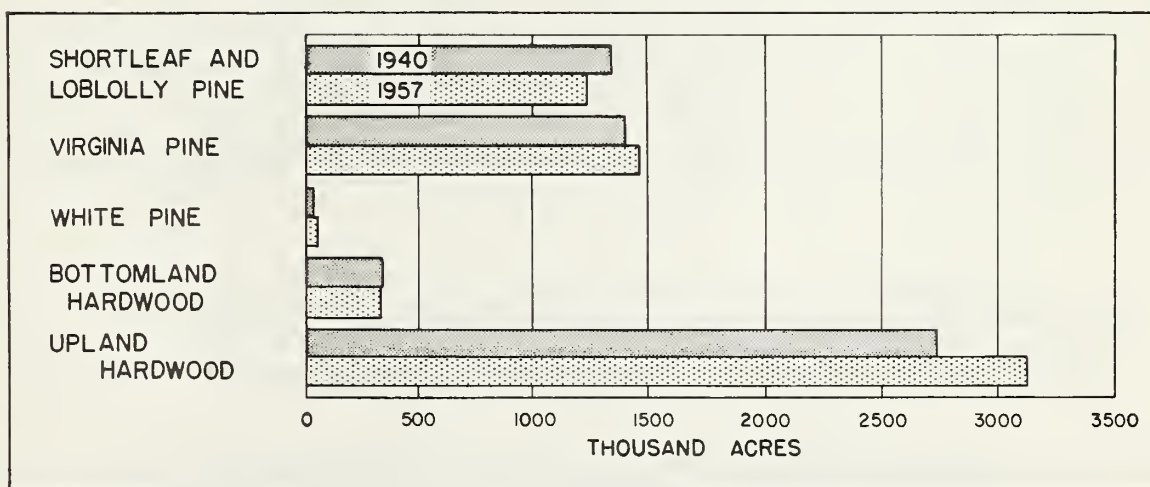


Figure 3.--Comparison of commercial forest area by forest type, 1940 and 1957.

Volume of growing stock up 12 percent.--Total cubic volume in sound trees 5.0 inches d.b.h. or larger is 12 percent above the 1940 level (table B). Pine dropped 11 percent in volume, while hardwoods increased 27 percent. Soft hardwoods and hard hardwoods increased at almost equal rates. Yellow-poplar, which makes up about one-half of the soft hardwood volume, has not kept pace with the increase of the less desirable soft hardwoods. Yellow-poplar growing stock volume has risen 16 percent since 1940.

Table B.--Comparison of volumes in all trees 5.0 inches d.b.h. or larger, 1940 to 1957

Class of material and species group	1940 ^{1/}	1957	Change	
	<u>Million cu. ft.</u>	<u>Million cu. ft.</u>	<u>Million cu. ft.</u>	<u>Percent</u>
Growing stock:				
Yellow pines	1,578	1,399	-179	-11
Other softwoods	48	53	+5	+10
Soft hardwoods	712	908	+196	+28
Hard hardwoods	1,801	2,294	+493	+27
All species	4,139	4,654	+515	+12
All live trees:				
Softwoods	1,723	1,636	-87	-5
Hardwoods,	2,904	3,840	+936	+32
All live trees	4,627	5,476	+849	+18

^{1/} Original survey volumes have been recomputed to eliminate differences resulting from changes in standards between the two surveys. Thus, the 1940 estimate shown here will not agree with volumes previously published.

A comparison of softwood and hardwood growing stock in 1940 and 1957 by d.b.h. class is shown in figure 4. Softwood volume has dropped considerably in trees 10 inches and larger, while hardwoods show a marked gain in all diameters below 20 inches.

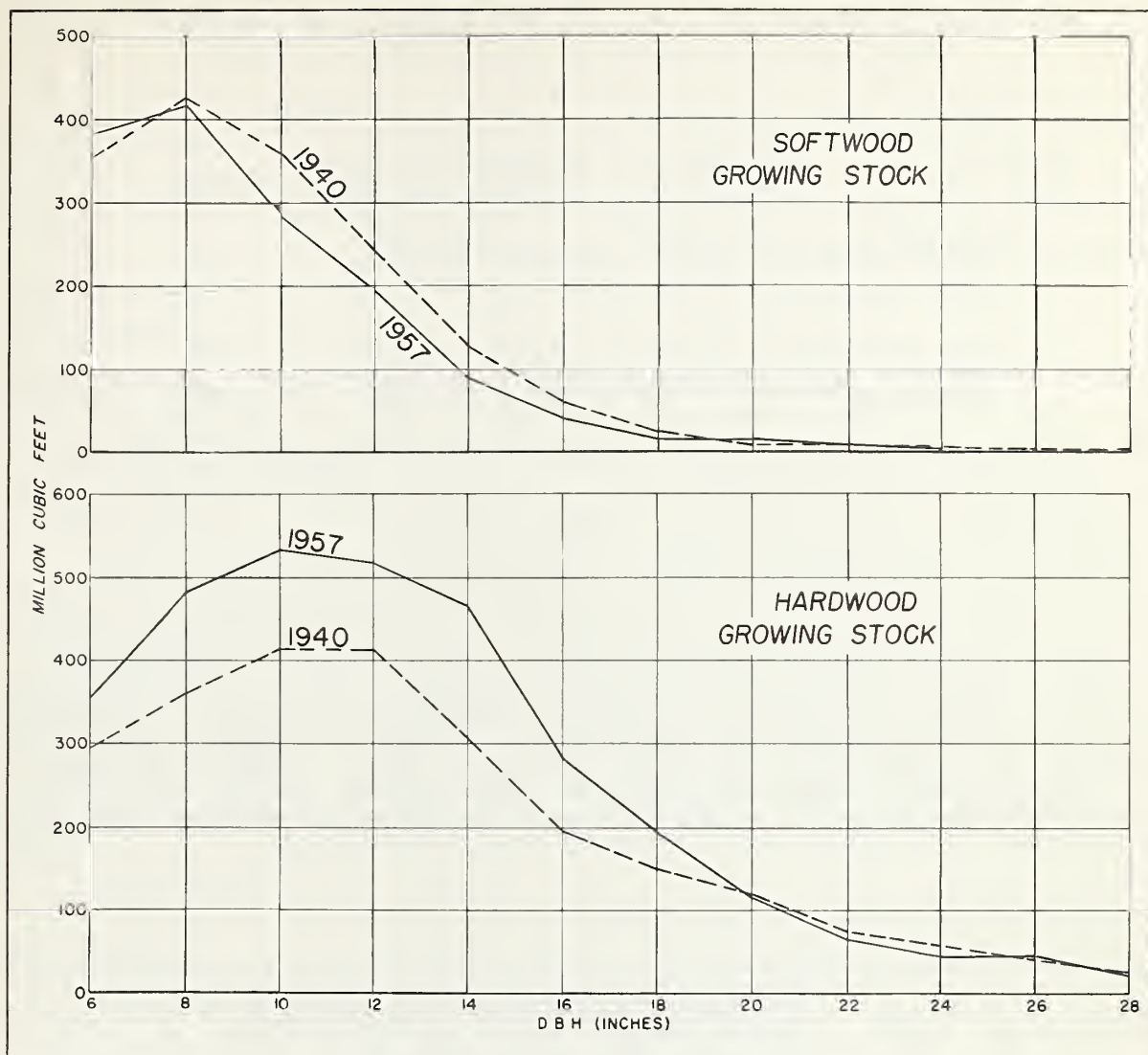


Figure 4.--Comparison of growing stock volume by tree diameter, 1940 and 1957.

The number of sound softwood trees in the 2-inch and 4-inch d.b.h. classes, for which no volume is assigned, has increased 3 percent since 1940, while hardwoods of similar size have increased 24 percent.

Pine sawtimber decreased 25 percent in 17 years.--Board-foot volume of yellow-pine sawtimber is down 25 percent from the 1940 level (table C). Board-foot volume of hardwoods increased 26 percent, making a net increase of 7 percent for all species. The drop in pine sawtimber volume was about the same in both the Northern and Southern Piedmont, but the increase in hardwood volume was about twice as great in the northern subregion as in the southern.

Table C.--Comparison of sawtimber volumes, 1940 and 1957

Species group	1940 ^{1/}	1957	Change	
	<u>Million</u> <u>bd.-ft.</u>	<u>Million</u> <u>bd.-ft.</u>	<u>Million</u> <u>bd.-ft.</u>	<u>Percent</u>
Yellow pines	3,733	2,811	-922	-25
Other softwoods	151	151	0	0
Soft hardwoods	2,060	2,559	+499	+24
Hard hardwoods	4,513	5,712	+1,199	+27
All species	10,457	11,233	+776	+7

^{1/} See footnote 1, table B.

The oaks, as a group, have made the greatest increase in sawtimber volume, about equaling the drop in yellow-pine (fig. 5). Board-foot volume in yellow pines has changed from slightly higher than that for the oaks in 1940 to less than two-thirds of their volume in 1957. Percentage-wise, the mixed group, including hickory, red maple, sweetgum, blackgum, and other minor species, has made the largest gain, expanding one-third in board-foot volume. The economically important yellow-poplar species increased by a little over 17 percent during the period.

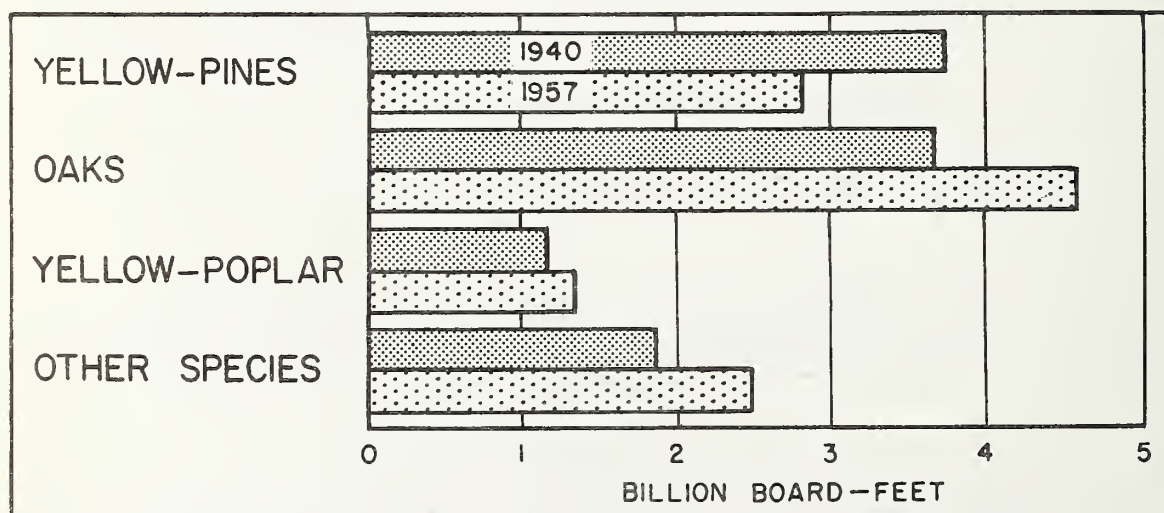


Figure 5.--Comparison of board-foot volumes in major groups of species, 1940 and 1957.

Table 1.--Gross area^{1/} by broad use class, 1957

Class of use	Area					
	Entire Piedmont		Northern Piedmont		Southern Piedmont	
	<u>Thousand acres</u>	<u>Percent</u>	<u>Thousand acres</u>	<u>Percent</u>	<u>Thousand acres</u>	<u>Percent</u>
Forest land:						
Commercial	6,239.8	61.6	2,492.5	55.9	3,747.3	66.1
Noncommercial:						
Productive-reserved	126.3	1.3	110.3	2.5	16.0	0.3
Unproductive	24.9	0.2	24.2	0.5	0.7	(2/)
Total forest	6,391.0	63.1	2,627.0	58.9	3,764.0	66.4
Nonforest land:						
Agriculture	3,341.1	33.0	1,637.5	36.8	1,703.6	30.0
Urban and other ^{3/}	294.4	2.9	160.7	3.6	133.7	2.4
Total nonforest	3,635.5	35.9	1,798.2	40.4	1,837.3	32.4
Total land area	10,026.5	99.0	4,425.2	99.3	5,601.3	98.8
Total water area ^{4/}	103.4	1.0	32.4	0.7	71.0	1.2
All classes	10,129.9	100.0	4,457.6	100.0	5,672.3	100.0

^{1/} From U. S. Bureau of the Census, 1950.

^{2/} Less than 0.05 percent.

^{3/} Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc., and a small area of marsh.

^{4/} Includes 70,300 acres of Census water reported in 1950 or created since that date and 33,100 acres of water according to Survey standards but defined by the Bureau of Census as land area.

Table 2.--Ownership of commercial forest land, 1957

Class of ownership	Commercial forest land					
	Entire Piedmont		Northern Piedmont		Southern Piedmont	
	<u>Thousand acres</u>	<u>Percent</u>	<u>Thousand acres</u>	<u>Percent</u>	<u>Thousand acres</u>	<u>Percent</u>
Public land:						
National forest	83.3	1.3	66.1	2.7	17.2	0.4
Indian	--	--	--	--	--	--
Other Federal	100.5	1.6	41.1	1.6	59.4	1.6
Total Federal	183.8	2.9	107.2	4.3	76.6	2.0
State	44.7	0.7	1.2	0.1	43.5	1.2
County and municipal	10.8	0.2	3.1	0.1	7.7	0.2
Total public	239.3	3.8	111.5	4.5	127.8	3.4
Private land:						
Farm	4,717.8	75.6	1,771.5	71.1	2,946.3	78.6
Wood-using industries	440.9	7.1	140.5	5.6	300.4	8.0
Other	841.8	13.5	469.0	18.8	372.8	10.0
Total private	6,000.5	96.2	2,381.0	95.5	3,619.5	96.6
All classes	6,239.8	100.0	2,492.5	100.0	3,747.3	100.0

Table 3.--Commercial forest area by forest type and stand-size class, 1957
(In thousand acres)

ENTIRE PIEDMONT						
Forest type ^{1/}	Large sawtimber stands	Small sawtimber stands	Pole- timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	--	45.8	48.6	25.3	--	119.7
Shortleaf pine	12.9	254.5	420.9	95.7	--	784.0
Virginia pine	--	171.7	512.9	295.0	4.2	983.8
White pine	8.4	8.4	5.5	--	--	22.3
Total	21.3	480.4	987.9	416.0	4.2	1,909.8
Hardwood types:						
Oak-pine	37.3	202.6	351.8	64.5	4.5	660.7
Oak-hickory ^{2/}	672.7	933.9	1,374.5	312.7	38.9	3,332.7
Oak-gum-cypress	97.8	72.6	112.5	34.7	19.0	336.6
Total	807.8	1,209.1	1,838.8	411.9	62.4	4,330.0
All types	829.1	1,689.5	2,826.7	827.9	66.6	6,239.8
Percent	13.3	27.1	45.3	13.3	1.0	100.0
NORTHERN PIEDMONT						
Softwood types:						
Loblolly pine	--	3.8	6.8	3.4	--	14.0
Shortleaf pine	--	38.9	100.1	36.9	--	175.9
Virginia pine	--	84.4	199.7	112.2	4.2	400.5
White pine	4.2	8.4	1.4	--	--	14.0
Total	4.2	135.5	308.0	152.5	4.2	604.4
Hardwood types:						
Oak-pine	14.7	82.3	124.1	29.2	4.5	254.8
Oak-hickory ^{2/}	362.1	404.8	561.8	115.2	12.6	1,456.5
Oak-gum-cypress	75.0	28.8	46.2	19.0	7.8	176.8
Total	451.8	515.9	732.1	163.4	24.9	1,888.1
All types	456.0	651.4	1,040.1	315.9	29.1	2,492.5
Percent	18.3	26.1	41.7	12.7	1.2	100.0
SOUTHERN PIEDMONT						
Softwood types:						
Loblolly pine	--	42.0	41.8	21.9	--	105.7
Shortleaf pine	12.9	215.6	320.8	58.8	--	608.1
Virginia pine	--	87.3	313.2	182.8	--	583.3
White pine	4.2	--	4.1	--	--	8.3
Total	17.1	344.9	679.9	263.5	--	1,305.4
Hardwood types:						
Oak-pine	22.6	120.3	227.7	35.3	--	405.9
Oak-hickory ^{2/}	310.6	529.1	812.7	197.5	26.3	1,876.2
Oak-gum-cypress	22.8	43.8	66.3	15.7	11.2	159.8
Total	356.0	693.2	1,106.7	248.5	37.5	2,441.9
All types	373.1	1,038.1	1,786.6	512.0	37.5	3,747.3
Percent	9.9	27.7	47.7	13.7	1.0	100.0

^{1/} See description of forest type and stand-size class under "Definition of Terms."

^{2/} Small area of maple-beech-birch type included with oak-hickory type.

Table 4.--Net volume^{1/} of sawtimber by species and stand-size class,

Entire Piedmont, 1957

(In million board-feet)

Species ^{2/}	Large sawtimber stands	Small sawtimber stands	Pole- timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Loblolly pine	41.4	265.5	26.1	--	--	333.0
Shortleaf pine	152.5	1,072.3	271.7	--	--	1,496.5
Virginia pine	66.6	705.9	201.6	5.6	1.7	981.4
Total	260.5	2,043.7	499.4	5.6	1.7	2,810.9
White pine	63.0	54.2	3.3	--	1.6	122.1
Hemlock	7.1	7.2	--	--	--	14.3
Redcedar	3.0	5.7	6.3	--	--	15.0
Total sftwds.	333.6	2,110.8	509.0	5.6	3.3	2,962.3
Hardwoods:						
Blackgum	74.2	93.9	13.2	2.5	--	183.8
Sweetgum	153.4	228.6	38.2	12.3	--	432.5
Yellow-poplar	694.6	444.7	219.5	13.0	1.1	1,372.9
Soft maple	114.5	138.3	48.5	2.2	--	303.5
Other soft hwdws.	154.8	67.6	40.4	4.0	--	266.8
Total	1,191.5	973.1	359.8	34.0	1.1	2,559.5
White & swamp chestnut oaks	655.9	857.1	211.3	2.0	5.1	1,731.4
Other white oaks	362.0	373.8	97.7	3.8	--	837.3
Northern red oak	380.3	220.0	49.4	3.8	5.6	659.1
Other red oaks	555.3	607.1	160.3	5.3	--	1,328.0
Hickory	320.8	304.0	88.4	8.3	--	721.5
Ash	39.2	22.0	31.7	--	--	92.9
Beech	49.8	54.2	7.6	--	--	111.6
Black walnut	38.2	12.4	3.6	2.6	--	56.8
Other hard hwdws.	111.8	32.3	22.8	1.9	4.3	173.1
Total	2,513.3	2,482.9	672.8	27.7	15.0	5,711.7
Total hwdws.	3,704.8	3,456.0	1,032.6	61.7	16.1	8,271.2
All species	4,038.4	5,566.8	1,541.6	67.3	19.4	11,233.5
Percent	35.9	49.6	13.7	0.6	0.2	100.0

^{1/} Log scale, International 1/4-inch rule.^{2/} See "Definition of Terms" for species combined with others.

Table 5.--Net volume^{1/} of sawtimber by species and diameter class,
Entire Piedmont, 1957

Species	10-12 inches ^{2/}	14-18 inches	20-24 inches	26+ inches	All diameters	
	<u>Million</u> <u>bd.-ft.</u>	<u>Million</u> <u>bd.-ft.</u>	<u>Million</u> <u>bd.-ft.</u>	<u>Million</u> <u>bd.-ft.</u>	<u>Million</u> <u>bd.-ft.</u>	<u>Percent</u>
Softwoods:						
Loblolly pine	164.3	150.5	18.2	--	333.0	3.0
Shortleaf pine	1,081.6	346.8	68.1	--	1,496.5	13.3
Virginia pine	778.6	195.8	7.0	--	981.4	8.7
Total	2,024.5	693.1	93.3	--	2,810.9	25.0
White pine	34.0	63.6	24.5	--	122.1	1.1
Hemlock	2.5	11.8	--	--	14.3	0.1
Redcedar	15.0	--	--	--	15.0	0.2
Total sftwds.	2,076.0	768.5	117.8	--	2,962.3	26.4
Hardwoods:						
Blackgum	56.4	101.1	26.3	--	183.8	1.6
Sweetgum	130.0	238.3	51.9	12.3	432.5	3.9
Yellow-poplar	285.6	749.3	265.5	72.5	1,372.9	12.2
Soft maple	99.5	153.5	35.3	15.2	303.5	2.7
Other soft hwdws.	64.8	129.1	64.5	8.4	266.8	2.4
Total	636.3	1,371.3	443.5	108.4	2,559.5	22.8
White & swamp chestnut oaks	477.3	957.4	190.7	106.0	1,731.4	15.4
Other white oaks	243.9	398.0	86.8	108.6	837.3	7.5
Northern red oak	110.3	272.5	95.2	181.1	659.1	5.9
Other red oaks	317.9	688.1	180.9	141.1	1,328.0	11.8
Hickory	174.3	403.3	94.7	49.2	721.5	6.4
Ash	33.7	46.7	12.5	--	92.9	0.8
Beech	17.4	53.9	34.4	5.9	111.6	1.0
Black walnut	14.0	38.8	4.0	--	56.8	0.5
Other hard hwdws.	42.2	97.3	33.6	--	173.1	1.5
Total	1,431.0	2,956.0	732.8	591.9	5,711.7	50.8
Total hwdws.	2,067.3	4,327.3	1,176.3	700.3	8,271.2	73.6
All species	4,143.3	5,095.8	1,294.1	700.3	11,233.5	100.0
Percent	36.9	45.4	11.5	6.2	100.0	--

^{1/} Log scale, International 1/4-inch rule.

^{2/} Ten-inch hardwoods are not included since they are below sawtimber size.

Table 5a.--Net volume^{1/} of sawtimber by species and diameter class,
Northern Piedmont, 1957

Species	10-12 inches ^{2/}	14-18 inches	20-24 inches	26+ inches	All diameters	
	<u>Million</u> <u>bd.-ft.</u>	<u>Million</u> <u>bd.-ft.</u>	<u>Million</u> <u>bd.-ft.</u>	<u>Million</u> <u>bd.-ft.</u>	<u>Million</u> <u>bd.-ft.</u>	<u>Percent</u>
Softwoods:						
Loblolly pine	9.6	16.0	--	--	25.6	0.5
Shortleaf pine	210.9	78.0	--	--	288.9	5.9
Virginia pine	381.9	107.6	7.0	--	496.5	10.2
Total	602.4	201.6	7.0	--	811.0	16.6
White pine	16.4	25.7	--	--	42.1	0.9
Hemlock	0.9	6.2	--	--	7.1	0.1
Redcedar	4.8	--	--	--	4.8	0.1
Total sftwds.	624.5	233.5	7.0	--	865.0	17.7
Hardwoods:						
Blackgum	21.6	57.7	8.2	--	87.5	1.8
Sweetgum	22.6	52.5	16.1	--	91.2	1.9
Yellow-poplar	110.6	344.2	116.5	48.6	619.9	12.7
Soft maple	39.8	64.0	6.0	15.2	125.0	2.5
Other soft hwdws.	19.7	63.5	45.6	--	128.8	2.6
Total	214.3	581.9	192.4	63.8	1,052.4	21.5
White & swamp chestnut oaks	246.0	553.0	58.3	39.8	897.1	18.4
Other white oaks	122.7	206.4	63.6	77.7	470.4	9.6
Northern red oak	46.5	118.1	53.2	98.4	316.2	6.5
Other red oaks	137.1	363.8	104.6	79.2	684.7	14.0
Hickory	82.0	188.8	49.4	29.4	349.6	7.2
Ash	11.6	34.8	4.9	--	51.3	1.0
Beech	4.1	24.0	3.2	5.9	37.2	0.8
Black walnut	9.5	32.0	4.0	--	45.5	0.9
Other hard hwdws.	24.0	58.4	33.6	--	116.0	2.4
Total	683.5	1,579.3	374.8	330.4	2,968.0	60.8
Total hwdws.	897.8	2,161.2	567.2	394.2	4,020.4	82.3
All species	1,522.3	2,394.7	574.2	394.2	4,885.4	100.0
Percent	31.2	49.0	11.7	8.1	100.0	--

^{1/} Log scale, International 1/4-inch rule.

^{2/} Ten-inch hardwoods are not included since they are below sawtimber size.

Table 5b.--Net volume^{1/} of sawtimber by species and diameter class,
Southern Piedmont, 1957

Species	10-12 inches ^{2/}	14-18 inches	20-24 inches	26+ inches	All diameters	
	<u>Million</u> <u>bd.-ft.</u>	<u>Million</u> <u>bd.-ft.</u>	<u>Million</u> <u>bd.-ft.</u>	<u>Million</u> <u>bd.-ft.</u>	<u>Million</u> <u>bd.-ft.</u>	<u>Percent</u>
Softwoods:						
Loblolly pine	154.7	134.5	18.2	--	307.4	4.9
Shortleaf pine	870.7	268.8	68.1	--	1,207.6	19.0
Virginia pine	396.7	88.2	--	--	484.9	7.6
Total	1,422.1	491.5	86.3	--	1,999.9	31.5
White pine	17.6	37.9	24.5	--	80.0	1.2
Hemlock	1.6	5.6	--	--	7.2	0.1
Redcedar	10.2	--	--	--	10.2	0.2
Total sftwds.	1,451.5	535.0	110.8	--	2,097.3	33.0
Hardwoods:						
Blackgum	34.8	43.4	18.1	--	96.3	1.5
Sweetgum	107.4	185.8	35.8	12.3	341.3	5.4
Yellow-poplar	175.0	405.1	149.0	23.9	753.0	11.9
Soft maple	59.7	89.5	29.3	--	178.5	2.8
Other soft hdwds.	45.1	65.6	18.9	8.4	138.0	2.2
Total	422.0	789.4	251.1	44.6	1,507.1	23.8
White & swamp chestnut oaks	231.3	404.4	132.4	66.2	834.3	13.1
Other white oaks	121.2	191.6	23.2	30.9	366.9	5.8
Northern red oak	63.8	154.4	42.0	82.7	342.9	5.4
Other red oaks	180.8	324.3	76.3	61.9	643.3	10.1
Hickory	92.3	214.5	45.3	19.8	371.9	5.9
Ash	22.1	11.9	7.6	--	41.6	0.6
Beech	13.3	29.9	31.2	--	74.4	1.2
Black walnut	4.5	6.8	--	--	11.3	0.2
Other hard hdwds.	18.2	38.9	--	--	57.1	0.9
Total	747.5	1,376.7	358.0	261.5	2,743.7	43.2
Total hdwds.	1,169.5	2,166.1	609.1	306.1	4,250.8	67.0
All species	2,621.0	2,701.1	719.9	306.1	6,348.1	100.0
Percent	41.3	42.6	11.3	4.8	100.0	--

^{1/} Log scale, International 1/4-inch rule.

^{2/} Ten-inch hardwoods are not included since they are below sawtimber size.

Table 6.--Net volume^{1/} of sawtimber by forest type and stand-size class, 1957
(In million board-feet)

ENTIRE PIEDMONT						
Forest type	Large sawtimber stands	Small sawtimber stands	Pole- timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	--	266.3	20.0	--	--	286.3
Shortleaf pine	104.6	985.4	207.8	1.3	--	1,299.1
Virginia pine	--	664.4	180.5	6.8	--	851.7
White pine	41.3	34.8	1.5	--	--	77.6
Total	145.9	1,950.9	409.8	8.1	--	2,514.7
Hardwood types:						
Oak-pine	253.8	620.3	200.1	3.9	--	1,078.1
Oak-hickory	3,135.5	2,713.2	843.9	52.3	16.3	6,761.2
Oak-gum-cypress	503.2	282.4	87.8	3.0	3.1	879.5
Total	3,892.5	3,615.9	1,131.8	59.2	19.4	8,718.8
All types	4,038.4	5,566.8	1,541.6	67.3	19.4	11,233.5
Percent	35.9	49.6	13.7	0.6	0.2	100.0
NORTHERN PIEDMONT						
Softwood types:						
Loblolly pine	--	18.3	0.6	--	--	18.9
Shortleaf pine	--	160.6	34.0	--	--	194.6
Virginia pine	--	342.0	73.9	--	--	415.9
White pine	8.3	34.8	1.5	--	--	44.6
Total	8.3	555.7	110.0	--	--	674.0
Hardwood types:						
Oak-pine	92.3	253.9	71.9	--	--	418.1
Oak-hickory	1,706.5	1,222.5	301.9	13.7	1.2	3,245.8
Oak-gum-cypress	418.4	94.7	31.3	--	3.1	547.5
Total	2,217.2	1,571.1	405.1	13.7	4.3	4,211.4
All types	2,225.5	2,126.8	515.1	13.7	4.3	4,885.4
Percent	45.6	43.5	10.5	0.3	0.1	100.0
SOUTHERN PIEDMONT						
Softwood types:						
Loblolly pine	--	248.0	19.4	--	--	267.4
Shortleaf pine	104.6	824.8	173.8	1.3	--	1,104.5
Virginia pine	--	322.4	106.6	6.8	--	435.8
White pine	33.0	--	--	--	--	33.0
Total	137.6	1,395.2	299.8	8.1	--	1,840.7
Hardwood types:						
Oak-pine	161.5	366.4	128.2	3.9	--	660.0
Oak-hickory	1,429.0	1,490.7	542.0	38.6	15.1	3,515.4
Oak-gum-cypress	84.8	187.7	56.5	3.0	--	332.0
Total	1,675.3	2,044.8	726.7	45.5	15.1	4,507.4
All types	1,812.9	3,440.0	1,026.5	53.6	15.1	6,348.1
Percent	28.6	54.2	16.2	0.8	0.2	100.0

^{1/} Log scale, International 1/4-inch rule.

Table 7.--Net volume of sawtimber by species group, log grade, and tree-size class, Entire Piedmont, 1957

PINE						
Log grade	10 - 14 inches ^{1/}		16+ inches		All trees	
	<u>Million</u> <u>bd.-ft.</u>	<u>Percent</u>	<u>Million</u> <u>bd.-ft.</u>	<u>Percent</u>	<u>Million</u> <u>bd.-ft.</u>	<u>Percent</u>
Grade 1	--	--	11.6	3.2	11.6	0.4
Grade 2	218.2	8.9	71.7	19.9	289.9	10.3
Grade 3	1,691.2	69.0	188.5	52.4	1,879.7	66.9
Grade 4	541.6	22.1	88.1	24.5	629.7	22.4
Total	2,451.0	100.0	359.9	100.0	2,810.9	100.0

OTHER SOFTWOODS						
Grade 1	--	--	--	--	--	--
Grade 2	1.1	1.5	30.5	39.1	31.6	20.9
Grade 3	52.6	71.6	28.4	36.5	81.0	53.5
Grade 4	19.8	26.9	19.0	24.4	38.8	25.6
Total	73.5	100.0	77.9	100.0	151.4	100.0

SOFT HARDWOODS						
Grade 1	--	--	172.3	13.5	172.3	6.7
Grade 2	34.6	2.7	250.2	19.6	284.8	11.1
Grade 3	432.4	33.7	342.1	26.8	774.5	30.3
Grade 4	816.1	63.6	511.8	40.1	1,327.9	51.9
Total	1,283.1	100.0	1,276.4	100.0	2,559.5	100.0

HARD HARDWOODS						
Grade 1	--	--	420.5	14.5	420.5	7.4
Grade 2	132.2	4.7	704.7	24.3	836.9	14.6
Grade 3	413.3	14.7	513.2	17.7	926.5	16.2
Grade 4	2,266.4	80.6	1,261.4	43.5	3,527.8	61.8
Total	2,811.9	100.0	2,899.8	100.0	5,711.7	100.0

^{1/} Ten-inch hardwoods are not included since they are below saw-timber size.

Table 8.--Net volume^{1/} of all timber by species and stand-size class,
Entire Piedmont, 1957
(In thousand cords)

GROWING STOCK						
Species	Large sawtimber stands	Small sawtimber stands	Pole- timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Loblolly pine	99	860	282	--	--	1,241
Shortleaf pine	447	5,270	4,208	34	--	9,959
Virginia pine	338	4,145	4,815	49	5	9,352
Total	884	10,275	9,305	83	5	20,552
White pine	130	145	25	--	4	304
Hemlock	14	27	--	--	--	41
Redcedar	35	82	225	5	--	347
Total sftwds.	1,063	10,529	9,555	88	9	21,244
Hardwoods:						
Blackgum	296	522	199	8	--	1,025
Sweetgum	542	1,118	653	53	--	2,366
Yellow-poplar	2,057	1,768	1,684	64	3	5,576
Soft maple	569	711	667	7	--	1,954
Other soft hwdws.	639	471	458	21	--	1,589
Total	4,103	4,590	3,661	153	3	12,510
White & swamp chestnut oaks	2,552	4,531	2,441	68	13	9,605
Other white oaks	1,297	1,984	1,367	18	--	4,666
Northern red oak	1,107	975	684	18	17	2,801
Other red oaks	1,797	3,065	2,444	17	--	7,323
Hickory	1,346	1,844	1,044	42	--	4,276
Ash	228	175	306	--	--	709
Beech	146	284	98	--	--	528
Black walnut	133	67	153	7	--	360
Dogwood, holly	35	32	135	3	--	205
Other hard hwdws.	464	219	502	36	14	1,235
Total	9,105	13,176	9,174	209	44	31,708
Total hwdws.	13,208	17,766	12,835	362	47	44,218
All species	14,271	28,295	22,390	450	56	65,462
Percent	21.8	43.2	34.2	0.7	0.1	100.0
OTHER MATERIAL						
Sound culls:						
Softwoods	71	642	1,630	232	29	2,604
Hardwoods	2,283	1,984	3,381	392	216	8,256
Rotten culls	201	131	222	54	21	629
Total other material	2,555	2,757	5,233	678	266	11,489

^{1/} Sound wood and bark.

Table 9.--Net volume^{1/} of all timber by species and diameter class,
Entire Piedmont, 1957
(In thousand cords)

GROWING STOCK							
Species	Diameter class						All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Loblolly pine	238	124	204	268	368	39	1,241
Shortleaf pine	2,667	2,935	2,002	1,359	848	148	9,959
Virginia pine	3,430	2,960	1,567	866	513	16	9,352
Total	6,335	6,019	3,773	2,493	1,729	203	20,552
White pine	12	38	25	55	130	44	304
Hemlock	12	--	2	4	23	--	41
Redcedar	192	117	34	4	--	--	347
Total sftwds.	6,551	6,174	3,834	2,556	1,882	247	21,244
Hardwoods:							
Blackgum	168	154	178	188	275	62	1,025
Sweetgum	365	295	545	393	624	144	2,366
Yellow-poplar	524	844	696	836	1,927	749	5,576
Soft maple	451	400	237	326	422	118	1,954
Other soft hwdws.	254	277	331	210	343	174	1,589
Total	1,762	1,970	1,987	1,953	3,591	1,247	12,510
White & swamp chestnut oaks	1,308	1,643	1,592	1,640	2,716	706	9,605
Other white oaks	545	1,010	748	789	1,098	476	4,666
Northern red oak	303	380	330	375	767	646	2,801
Other red oaks	1,079	1,180	1,252	1,086	1,959	767	7,323
Hickory	594	679	845	657	1,164	337	4,276
Ash	67	200	171	115	128	28	709
Beech	53	60	115	58	145	97	528
Black walnut	16	52	122	46	114	10	360
Dogwood, holly	130	13	42	4	16	--	205
Other hard hwdws.	404	128	210	147	264	82	1,235
Total	4,499	5,345	5,427	4,917	8,371	3,149	31,708
Total hwdws.	6,261	7,315	7,414	6,870	11,962	4,396	44,218
All species	12,812	13,489	11,248	9,426	13,844	4,643	65,462
Percent	19.6	20.6	17.2	14.4	21.1	7.1	100.0

OTHER MATERIAL							
Sound culls:							
Softwoods	545	605	727	437	270	20	2,604
Hardwoods	1,465	1,465	1,239	1,210	1,683	1,194	8,256
Rotten culls	74	142	116	22	65	210	629
Total other material	2,084	2,212	2,082	1,669	2,018	1,424	11,489

^{1/} Sound wood and bark.

Table 9a.--Net volume^{1/} of all timber by species and diameter class,
Northern Piedmont, 1957
(In thousand cords)

GROWING STOCK

Species	Diameter class						All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Loblolly pine	14	--	6	20	39	--	79
Shortleaf pine	462	342	368	309	188	--	1,669
Virginia pine	1,447	1,249	778	427	284	16	4,201
Total	1,923	1,591	1,152	756	511	16	5,949
White pine	6	26	11	27	52	--	122
Hemlock	--	--	2	--	12	--	14
Redcedar	72	30	9	2	--	--	113
Total sftwds.	2,001	1,647	1,174	785	575	16	6,198
Hardwoods:							
Blackgum	79	12	62	72	155	19	399
Sweetgum	149	128	161	65	138	36	677
Yellow-poplar	142	213	218	316	876	365	2,130
Soft maple	211	192	71	130	176	49	829
Other soft hwdws.	111	119	125	65	169	109	698
Total	692	664	637	648	1,514	578	4,733
White & swamp chestnut oaks	624	885	772	822	1,583	231	4,917
Other white oaks	243	403	247	381	580	345	2,199
Northern red oak	135	201	157	157	332	354	1,336
Other red oaks	536	512	526	449	1,044	435	3,502
Hickory	249	231	328	302	547	184	1,841
Ash	42	79	150	40	93	11	415
Beech	17	28	20	13	63	22	163
Black walnut	9	22	98	31	93	10	263
Dogwood, holly	44	--	20	--	10	--	74
Other hard hwdws.	191	64	93	87	160	82	677
Total	2,090	2,425	2,411	2,282	4,505	1,674	15,387
Total hwdws.	2,782	3,089	3,048	2,930	6,019	2,252	20,120
All species	4,783	4,736	4,222	3,715	6,594	2,268	26,318
Percent	18.2	18.0	16.0	14.1	25.1	8.6	100.0

OTHER MATERIAL

Sound culls:							
Softwoods	197	252	328	237	87	20	1,121
Hardwoods	650	673	610	521	785	714	3,953
Rotten culls	16	40	66	7	34	74	237
Total other material	863	965	1,004	765	906	808	5,311

^{1/} Sound wood and bark.

Table 9b.--Net volume^{1/} of all timber by species and diameter class,
Southern Piedmont, 1957
(In thousand cords)

GROWING STOCK							
Species	Diameter class						All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Loblolly pine	224	124	198	248	329	39	1,162
Shortleaf pine	2,205	2,593	1,634	1,050	660	148	8,290
Virginia pine	1,983	1,711	789	439	229	--	5,151
Total	4,412	4,428	2,621	1,737	1,218	187	14,603
White pine	6	12	14	28	78	44	182
Hemlock	12	--	--	4	11	--	27
Redcedar	120	87	25	2	--	--	234
Total sftwds.	4,550	4,527	2,660	1,771	1,307	231	15,046
Hardwoods:							
Blackgum	89	142	116	116	120	43	626
Sweetgum	216	167	384	328	486	108	1,689
Yellow-poplar	382	631	478	520	1,051	384	3,446
Soft maple	240	208	166	196	246	69	1,125
Other soft hwdws.	143	158	206	145	174	65	891
Total	1,070	1,306	1,350	1,305	2,077	669	7,777
White & swamp chestnut oaks	684	758	820	818	1,133	475	4,688
Other white oaks	302	607	501	408	518	131	2,467
Northern red oak	168	179	173	218	435	292	1,465
Other red oaks	543	668	726	637	915	332	3,821
Hickory	345	448	517	355	617	153	2,435
Ash	25	121	21	75	35	17	294
Beech	36	32	95	45	82	75	365
Black walnut	7	30	24	15	21	--	97
Dogwood, holly	86	13	22	4	6	--	131
Other hard hwdws.	213	64	117	60	104	--	558
Total	2,409	2,920	3,016	2,635	3,866	1,475	16,321
Total hwdws.	3,479	4,226	4,366	3,940	5,943	2,144	24,098
All species	8,029	8,753	7,026	5,711	7,250	2,375	39,144
Percent	20.5	22.4	17.9	14.6	18.5	6.1	100.0
OTHER MATERIAL							
Sound culls:							
Softwoods	348	353	399	200	183	--	1,483
Hardwoods	815	792	629	689	898	480	4,303
Rotten culls	58	102	50	15	31	136	392
Total other material	1,221	1,247	1,078	904	1,112	616	6,178

^{1/} Sound wood and bark.

Table 10.--Net volume^{1/} of all timber by species and class of material,
 Entire Piedmont, 1957
 (In thousand cords)

Species	Growing stock				Other material	
	Sawtimber trees		Pole- timber trees	Total sound trees	Sound culls	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Loblolly pine	728	151	362	1,241	96	--
Shortleaf pine	3,382	975	5,602	9,959	273	--
Virginia pine	2,401	561	6,390	9,352	2,127	4
Total	6,511	1,687	12,354	20,552	2,496	4
White pine	224	30	50	304	67	--
Hemlock	24	5	12	41	34	--
Redcedar	28	10	309	347	7	--
Total sftwds.	6,787	1,732	12,725	21,244	2,604	4
Hardwoods:						
Blackgum	392	133	500	1,025	290	53
Sweetgum	910	251	1,205	2,366	227	13
Yellow-poplar	2,823	689	2,064	5,576	381	103
Soft maple	637	229	1,088	1,954	1,086	95
Other soft hwdws.	541	186	862	1,589	470	6
Total	5,303	1,488	5,719	12,510	2,454	270
White & swamp chestnut oaks	3,453	1,609	4,543	9,605	834	48
Other white oaks	1,660	703	2,303	4,666	1,200	70
Northern red oak	1,275	513	1,013	2,801	456	21
Other red oaks	2,629	1,183	3,511	7,323	767	57
Hickory	1,459	699	2,118	4,276	403	28
Ash	208	63	438	709	310	16
Beech	229	71	228	528	211	--
Black walnut	117	53	190	360	179	8
Dogwood, holly	13	7	185	205	129	16
Scrub oak ^{2/}	--	--	--	--	445	6
Other hard hwdws.	343	150	742	1,235	868	35
Total	11,386	5,051	15,271	31,708	5,802	355
Total hwdws.	16,689	6,539	20,990	44,218	8,256	625
All species	23,476	8,271	33,715	65,462	10,860	629
Percent	35.9	12.6	51.5	100.0	94.5	5.5

^{1/} Sound wood and bark.

^{2/} Includes noncommercial species.

Table 10a.--Net volume^{1/} of all timber by species and class of material,
Northern Piedmont, 1957
(In thousand cords)

Species	Growing stock				Other material	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Loblolly pine	52	13	14	79	22	--
Shortleaf pine	644	221	804	1,669	53	--
Virginia pine	1,158	347	2,696	4,201	999	3
Total	1,854	581	3,514	5,949	1,074	3
White pine	82	8	32	122	22	--
Hemlock	12	2	--	14	20	--
Redcedar	9	2	102	113	5	--
Total sftwds.	1,957	593	3,648	6,198	1,121	3
Hardwoods:						
Blackgum	186	60	153	399	129	19
Sweetgum	189	50	438	677	46	--
Yellow-poplar	1,269	288	573	2,130	205	27
Soft maple	266	89	474	829	437	22
Other soft hwdws.	259	84	355	698	238	--
Total	2,169	571	1,993	4,733	1,055	68
White & swamp chestnut oaks	1,825	811	2,281	4,917	411	35
Other white oaks	938	368	893	2,199	571	35
Northern red oak	611	232	493	1,336	237	2
Other red oaks	1,358	570	1,574	3,502	360	31
Hickory	703	330	808	1,841	194	6
Ash	110	34	271	415	144	16
Beech	76	22	65	163	85	--
Black walnut	93	41	129	263	117	8
Dogwood, holly	7	3	64	74	72	3
Scrub oak ^{2/}	--	--	--	--	362	6
Other hard hwdws.	229	100	348	677	345	24
Total	5,950	2,511	6,926	15,387	2,898	166
Total hwdws.	8,119	3,082	8,919	20,120	3,953	234
All species	10,076	3,675	12,567	26,318	5,074	237
Percent	38.3	14.0	47.7	100.0	95.5	4.5

^{1/} Sound wood and bark.

^{2/} Includes noncommercial species.

Table 10b.--Net volume^{1/} of all timber by species and class of material,
Southern Piedmont, 1957
(In thousand cords)

Species	Growing stock				Other material	
	Sawtimber trees		Pole- timber trees	Total sound trees	Sound culls	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Loblolly pine	676	138	348	1,162	74	--
Shortleaf pine	2,738	754	4,798	8,290	220	--
Virginia pine	1,243	214	3,694	5,151	1,128	1
Total	4,657	1,106	8,840	14,603	1,422	1
White pine	142	22	18	182	45	--
Hemlock	12	3	12	27	14	--
Redcedar	19	8	207	234	2	--
Total sftwds.	4,830	1,139	9,077	15,046	1,483	1
Hardwoods:						
Blackgum	206	73	347	626	161	34
Sweetgum	721	201	767	1,689	181	13
Yellow-poplar	1,554	401	1,491	3,446	176	76
Soft maple	371	140	614	1,125	649	73
Other soft hwdws.	282	102	507	891	232	6
Total	3,134	917	3,726	7,777	1,399	202
White & swamp chestnut oaks	1,628	798	2,262	4,688	423	13
Other white oaks	722	335	1,410	2,467	629	35
Northern red oak	664	281	520	1,465	219	19
Other red oaks	1,271	613	1,937	3,821	407	26
Hickory	756	369	1,310	2,435	209	22
Ash	98	29	167	294	166	--
Beech	153	49	163	365	126	--
Black walnut	24	12	61	97	62	--
Dogwood, holly	6	4	121	131	57	13
Scrub oak ^{2/}	--	--	--	--	83	--
Other hard hwdws.	114	50	394	558	523	61
Total	5,436	2,540	8,345	16,321	2,904	189
Total hwdws.	8,570	3,457	12,071	24,098	4,303	391
All species	13,400	4,596	21,148	39,144	5,786	392
Percent	34.2	11.8	54.0	100.0	93.7	6.3

^{1/} Sound wood and bark.

^{2/} Includes noncommercial species.

Table 11.--Net volume^{1/} of all timber by forest type and stand-size class,
Entire Piedmont, 1957
(In thousand cords)

GROWING STOCK						
Forest type	Large sawtimber stands	Small sawtimber stands	Pole- timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	--	1,047	359	--	--	1,406
Shortleaf pine	249	5,201	3,897	26	--	9,373
Virginia pine	--	3,590	4,822	104	--	8,516
White pine	84	78	3	--	--	165
Total	333	9,916	9,081	130	--	19,460
Hardwood types:						
Oak-pine	899	3,322	2,297	22	--	6,540
Oak-hickory	11,198	13,740	10,153	274	46	35,411
Oak-gum-cypress	1,841	1,317	859	24	10	4,051
Total	13,938	18,379	13,309	320	56	46,002
All types	14,271	28,295	22,390	450	56	65,462
Percent	21.8	43.2	34.2	0.7	0.1	100.0

OTHER MATERIAL

Softwood types:						
Loblolly pine	--	58	60	30	--	148
Shortleaf pine	13	288	380	--	--	681
Virginia pine	--	390	1,273	216	--	1,879
White pine	49	5	2	--	--	56
Total	62	741	1,715	246	--	2,764
Hardwood types:						
Oak-pine	114	328	474	21	61	998
Oak-hickory	1,921	1,434	2,761	408	116	6,640
Oak-gum-cypress	458	254	283	3	89	1,087
Total	2,493	2,016	3,518	432	266	8,725
All types	2,555	2,757	5,233	678	266	11,489
Percent	22.2	24.0	45.6	5.9	2.3	100.0

^{1/} Sound wood and bark.

Table 11a.--Net volume^{1/} of all timber by forest type and stand-size class,
Northern Piedmont, 1957
(In thousand cords)

GROWING STOCK

Forest type	Large sawtimber stands	Small sawtimber stands	Pole- timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	--	78	64	--	--	142
Shortleaf pine	--	754	628	8	--	1,390
Virginia pine	--	2,026	1,743	38	--	3,807
White pine	18	78	3	--	--	99
Total	18	2,936	2,438	46	--	5,438
Hardwood types:						
Oak-pine	338	1,395	761	11	--	2,505
Oak-hickory	5,645	6,171	4,097	82	4	15,999
Oak-gum-cypress	1,437	535	379	15	10	2,376
Total	7,420	8,101	5,237	108	14	20,880
All types	7,438	11,037	7,675	154	14	26,318
Percent	28.2	41.9	29.2	0.6	0.1	100.0

OTHER MATERIAL

Softwood types:						
Loblolly pine	--	26	10	--	--	36
Shortleaf pine	--	49	103	--	--	152
Virginia pine	--	177	605	137	--	919
White pine	41	5	--	--	--	46
Total	41	257	718	137	--	1,153
Hardwood types:						
Oak-pine	31	79	156	4	61	331
Oak-hickory	1,165	622	1,221	200	--	3,208
Oak-gum-cypress	344	119	87	3	66	619
Total	1,540	820	1,464	207	127	4,158
All types	1,581	1,077	2,182	344	127	5,311
Percent	29.7	20.3	41.1	6.5	2.4	100.0

^{1/} Sound wood and bark.

Table 11b.--Net volume^{1/} of all timber by forest type and stand-size class,
Southern Piedmont, 1957
(In thousand cords)

GROWING STOCK						
Forest type	Large sawtimber stands	Small sawtimber stands	Pole- timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood types:						
Loblolly pine	--	969	295	--	--	1,264
Shortleaf pine	249	4,447	3,269	18	--	7,983
Virginia pine	--	1,564	3,079	66	--	4,709
White pine	66	--	--	--	--	66
Total	315	6,980	6,643	84	--	14,022
Hardwood types:						
Oak-pine	561	1,927	1,536	11	--	4,035
Oak-hickory	5,553	7,569	6,056	192	42	19,412
Oak-gum-cypress	404	782	480	9	--	1,675
Total	6,518	10,278	8,072	212	42	25,122
All types	6,833	17,258	14,715	296	42	39,144
Percent	17.4	44.1	37.6	0.8	0.1	100.0
OTHER MATERIAL						
Softwood types:						
Loblolly pine	--	32	50	30	--	112
Shortleaf pine	13	239	277	--	--	529
Virginia pine	--	213	668	79	--	960
White pine	8	--	2	--	--	10
Total	21	484	997	109	--	1,611
Hardwood types:						
Oak-pine	83	249	318	17	--	667
Oak-hickory	756	812	1,540	208	116	3,432
Oak-gum-cypress	114	135	196	--	23	468
Total	953	1,196	2,054	225	139	4,567
All types	974	1,680	3,051	334	139	6,178
Percent	15.8	27.2	49.4	5.4	2.2	100.0

^{1/} Sound wood and bark.

Table 12.--Net volume^{1/} of all timber by species and diameter class,

Entire Piedmont, 1957

(In million cubic feet)

Species	Diameter class						All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Loblolly pine	13.9	8.5	17.8	20.3	29.2	3.4	93.1
Shortleaf pine	156.2	198.5	147.6	103.8	67.8	12.4	686.3
Virginia pine	201.3	198.9	112.3	65.1	40.1	1.3	619.0
Total	371.4	405.9	277.7	189.2	137.1	17.1	1,398.4
White pine	0.8	2.8	2.3	4.6	11.4	4.2	26.1
Hemlock	0.7	--	0.2	0.3	2.0	--	3.2
Redcedar	12.4	8.9	2.4	0.4	--	--	24.1
Total sftwds.	385.3	417.6	282.6	194.5	150.5	21.3	1,451.8
Hardwoods:							
Blackgum	9.6	10.1	12.7	13.9	21.7	5.1	73.1
Sweetgum	20.9	19.4	39.3	28.9	49.0	11.8	169.3
Yellow-poplar	29.9	55.8	50.0	63.5	153.1	62.1	414.4
Soft maple	25.7	26.6	17.1	24.3	33.4	9.7	136.8
Other soft hwdws.	14.3	18.2	23.9	16.0	27.4	14.3	114.1
Total	100.4	130.1	143.0	146.6	284.6	103.0	907.7
White & swamp chestnut oaks	74.9	108.2	114.3	123.4	215.6	58.5	694.9
Other white oaks	31.3	67.0	53.6	60.0	86.7	39.5	338.1
Northern red oak	17.3	25.0	23.6	28.5	61.0	53.7	209.1
Other red oaks	61.6	77.7	90.2	82.2	154.8	63.4	529.9
Hickory	33.8	44.4	60.7	49.8	92.7	27.8	309.2
Ash	3.8	13.1	12.2	8.6	10.0	2.3	50.0
Beech	3.1	4.0	8.2	4.3	11.5	7.9	39.0
Black walnut	0.9	3.4	8.8	3.7	8.9	0.8	26.5
Dogwood, holly	7.3	0.9	3.1	0.2	1.2	--	12.7
Other hard hwdws.	22.9	8.4	15.0	11.1	21.0	6.7	85.1
Total	256.9	352.1	389.7	371.8	663.4	260.6	2,294.5
Total hwdws.	357.3	482.2	532.7	518.4	948.0	363.6	3,202.2
All species	742.6	899.8	815.3	712.9	1,098.5	384.9	4,654.0
Percent	16.0	19.3	17.5	15.3	23.6	8.3	100.0
OTHER MATERIAL							
Sound culls:							
Softwoods	32.0	40.6	53.6	33.8	22.0	1.7	183.7
Hardwoods	83.5	97.1	89.2	90.5	132.7	99.0	592.0
Rotten culls	4.2	9.4	8.2	1.8	4.9	17.4	45.9
Total other material	119.7	147.1	151.0	126.1	159.6	118.1	821.6

^{1/} Excludes bark.

Table 13.--Net volume^{1/} of all timber by species and class of material,
Entire Piedmont, 1957
(In million cubic feet)

Species	Growing stock				Other material	
	Sawtimber trees		Pole- timber trees	Total sound trees	Sound culls	Rotten culls
	Saw-log portion	Upper stems				
Softwoods:						
Loblolly pine	53.9	16.8	22.4	93.1	6.7	--
Shortleaf pine	246.7	84.9	354.7	686.3	19.1	--
Virginia pine	180.9	37.9	400.2	619.0	149.3	0.3
Total	481.5	139.6	777.3	1,398.4	175.1	0.3
White pine	19.8	2.7	3.6	26.1	5.4	--
Hemlock	2.2	0.3	0.7	3.2	2.8	--
Redcedar	2.5	0.3	21.3	24.1	0.4	--
Total sftwds.	506.0	142.9	802.9	1,451.8	183.7	0.3
Hardwoods:						
Blackgum	30.6	10.1	32.4	73.1	19.8	3.8
Sweetgum	72.6	17.1	79.6	169.3	17.0	0.9
Yellow-poplar	225.8	52.9	135.7	414.4	27.6	8.3
Soft maple	50.6	16.8	69.4	136.8	79.2	6.7
Other soft hdwds.	43.9	13.8	56.4	114.1	32.9	0.5
Total	423.5	110.7	373.5	907.7	176.5	20.2
White & swamp chestnut oaks	279.5	118.0	297.4	694.9	61.7	3.5
Other white oaks	133.5	52.7	151.9	338.1	87.8	5.3
Northern red oak	103.3	39.9	65.9	209.1	34.3	1.8
Other red oaks	212.8	87.6	229.5	529.9	56.8	4.2
Hickory	116.8	53.5	138.9	309.2	28.8	1.9
Ash	16.5	4.4	29.1	50.0	22.1	1.2
Beech	18.1	5.6	15.3	39.0	15.9	--
Black walnut	9.3	4.1	13.1	26.5	12.3	0.6
Dogwood, holly	1.0	0.4	11.3	12.7	8.2	1.0
Scrub oak ^{2/}	--	--	--	--	28.6	0.3
Other hard hdwds.	27.8	11.0	46.3	85.1	59.0	5.6
Total	918.6	377.2	998.7	2,294.5	415.5	25.4
Total hdwds.	1,342.1	487.9	1,372.2	3,202.2	592.0	45.6
All species	1,848.1	630.8	2,175.1	4,654.0	775.7	45.9
Percent	39.7	13.6	46.7	100.0	94.4	5.6

^{1/} Excludes bark.

^{2/} Includes noncommercial species.

Table 14.---Average volume^{1/} per acre of sawtimber by forest type,
species group, and stand-size class, Entire Piedmont, 1957

(In board-feet)

Forest type and species group	Large sawtimber stands	Small sawtimber stands	Pole- timber stands	Other stand sizes	All stands
Loblolly pine					
Softwood	--	4,924	391	--	2,045
Hardwood	--	884	23	--	348
Shortleaf pine					
Softwood	6,679	3,432	453	--	1,467
Hardwood	1,398	441	41	14	190
Virginia pine					
Softwood	--	3,113	292	19	701
Hardwood	--	757	60	4	164
White pine					
Softwood	4,785	3,922	266	--	3,333
Hardwood	146	223	--	--	139
Oak-pine					
Softwood	2,667	1,277	263	--	683
Hardwood	4,130	1,784	305	57	949
Oak-hickory					
Softwood	157	175	41	9	98
Hardwood	4,505	2,731	573	186	1,930
Oak-gum-cypress					
Softwood	19	311	--	--	72
Hardwood	5,127	3,577	781	114	2,540
All types					
Softwood	402	1,249	180	10	475
Hardwood	4,469	2,046	365	87	1,326

^{1/} Log scale, International 1/4-inch rule.

Table 15.--Average volume^{1/} per acre of all trees by forest type, species group, and stand-size class, Entire Piedmont, 1957

(In standard cords)

Forest type and species group	Large sawtimber stands		Small sawtimber stands		Pole-timber stands		Other stand sizes		All stands	
	Sound trees	Cull trees	Sound trees	Cull trees	Sound trees	Cull trees	Sound trees	Cull trees	Sound trees	Cull trees
Loblolly pine										
Softwood	--	--	19.6	1.0	6.4	0.8	--	1.2	10.1	1.0
Hardwood	--	--	3.2	0.2	0.9	0.4	--	--	1.6	0.3
Shortleaf pine										
Softwood	15.5	--	17.4	0.8	7.9	0.7	0.2	--	10.1	0.6
Hardwood	3.7	1.0	3.1	0.4	1.4	0.2	(2/)	--	1.8	0.3
Virginia pine										
Softwood	--	--	17.3	1.7	8.4	2.3	0.2	0.7	7.5	1.7
Hardwood	--	--	3.6	0.6	1.0	0.2	0.1	0.1	1.2	0.2
White pine										
Softwood	9.5	2.1	8.6	0.2	0.5	0.4	--	--	6.9	1.0
Hardwood	0.5	3.7	0.7	0.4	--	--	--	--	0.4	1.5
Oak-pine										
Softwood	7.6	0.7	6.2	0.3	2.7	0.3	0.1	0.2	3.8	0.3
Hardwood	16.4	2.3	10.2	1.3	3.8	1.1	0.2	0.9	6.1	1.2
Oak-hickory										
Softwood	0.7	(2/)	0.9	(2/)	0.5	(2/)	(2/)	0.1	0.6	(2/)
Hardwood	15.9	2.8	13.8	1.5	6.9	2.0	0.9	1.4	10.0	1.9
Oak-gum-cypress										
Softwood	0.1	--	0.8	(2/)	0.2	--	--	--	0.2	(2/)
Hardwood	18.8	4.7	17.4	3.5	7.5	2.5	0.6	1.7	11.8	3.2
All types										
Softwood	1.3	0.1	6.2	0.4	3.4	0.6	0.1	0.3	3.4	0.4
Hardwood	15.9	3.0	10.5	1.3	4.5	1.3	0.5	0.8	7.1	1.4

^{1/} Sound wood and bark.

^{2/} Less than 0.05 cord per acre.

Table 16.--Number of trees^{1/} by species group, quality class, and tree size, Entire Piedmont, 1957

(In thousand trees)

Species group and quality class	Sapling-size trees	Pole-size trees	Small sawtimber trees	Large sawtimber trees	All trees
Yellow pines:					
Sound trees	712,027	217,919	39,730	1,488	971,164
Sound culls	109,578	26,095	9,751	240	145,664
Rotten culls	--	71	35	--	106
Total	821,605	244,085	49,516	1,728	1,116,934
Other softwoods:					
Sound trees	115,319	9,352	1,122	291	126,084
Sound culls	5,915	1,161	331	19	7,426
Rotten culls	--	--	--	--	--
Total	121,234	10,513	1,453	310	133,510
Soft hardwoods:					
Sound trees	494,513	91,595	15,474	5,255	606,837
Sound culls	206,948	26,494	3,503	1,310	238,255
Rotten culls	--	2,322	280	202	2,804
Total	701,461	120,411	19,257	6,767	847,896
Hard hardwoods:					
Sound trees	1,094,200	222,804	39,145	12,970	1,369,119
Sound culls	587,150	63,546	8,060	3,553	662,309
Rotten culls	--	4,861	347	622	5,830
Total	1,681,350	291,211	47,552	17,145	2,037,258
All species	3,325,650	666,220	117,778	25,950	4,135,598

^{1/} All trees 1.0 inch d.b.h. and larger

Table 17.--Stocking on commercial forest land by forest type and tree-size class, Entire Piedmont, 1957

(In thousand acres)

GROWING STOCK OF ALL SIZES

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-100%	Total area
Loblolly pine	--	3.9	24.4	91.4	119.7
Shortleaf pine	--	53.5	79.1	651.4	784.0
Virginia pine	4.2	94.5	219.5	665.6	983.8
White pine	--	4.1	4.2	14.0	22.3
Oak-pine	4.4	37.7	135.8	482.8	660.7
Oak-hickory	23.8	255.7	775.2	2,278.0	3,332.7
Oak-gum-cypress	15.4	58.8	107.9	154.5	336.6
All types	47.8	508.2	1,346.1	4,337.7	6,239.8
Percent	0.8	8.1	21.6	69.5	100.0

SAWTIMBER GROWING STOCK

Loblolly pine	62.9	21.5	24.6	10.7	119.7
Shortleaf pine	375.6	279.3	85.9	43.2	784.0
Virginia pine	725.5	184.9	54.6	18.8	983.8
White pine	5.5	12.6	4.2	--	22.3
Oak-pine	299.5	291.4	52.1	17.7	660.7
Oak-hickory	1,245.2	1,575.0	456.0	56.5	3,332.7
Oak-gum-cypress	109.1	150.5	56.0	21.0	336.6
All types	2,823.3	2,515.2	733.4	167.9	6,239.8
Percent	45.2	40.3	11.8	2.7	100.0

Table 18.--Net annual growth by species group and unit of measure, Entire Piedmont, 1957

Species group	Sawtimber	Growing stock	
	<u>Million bd.-ft.</u>	<u>Million cu. ft.</u>	<u>Thousand cords</u>
Yellow pines	182.9	72.7	1,201
Other softwoods	5.8	1.8	24
Soft hardwoods	144.9	44.1	682
Hard hardwoods	180.8	65.0	1,006
All species	514.4	183.6	2,913

Table 19.--Net annual growth percentages by species group and unit of measure, Entire Piedmont, 1957

Unit of measure	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Board-feet	6.51	3.78	5.67	3.17	4.58
Cubic feet	5.20	3.37	4.85	2.83	3.94
Standard cords	5.84	3.47	5.45	3.17	4.45

Table 20.--Average annual timber cut by tree-size class and species group,

Entire Piedmont

SAWTIMBER (In million board-feet)

Tree-size class	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Small sawtimber	179.2	4.0	21.3	82.6	287.1
Large sawtimber	25.6	8.8	49.1	164.9	248.4
All trees	204.8	12.8	70.4	247.5	535.5

GROWING STOCK (In thousand cords)

Pole trees	716	2	76	203	997
Small sawtimber	510	10	68	263	851
Large sawtimber	61	17	113	415	606
All trees	1,287	29	257	881	2,454

GROWING STOCK (In million cubic feet)

Pole trees	41.7	0.2	4.8	12.8	59.5
Small sawtimber	38.9	0.9	5.1	20.2	65.1
Large sawtimber	5.0	1.6	9.3	33.6	49.5
All trees	85.6	2.7	19.2	66.6	174.1

Table 21.--Net annual change in volume by species group, Entire Piedmont, 1957

SAWTIMBER (In million board-feet)

Item	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1, 1957	2,810.9	151.4	2,559.5	5,711.7	11,233.5
Total growth	201.5	6.7	158.5	256.8	623.5
Mortality	18.6	0.9	13.6	76.0	109.1
Net growth	182.9	5.8	144.9	180.8	514.4
Timber cut	204.8	12.8	70.4	247.5	535.5
Loss or gain	-21.9	-7.0	+74.5	-66.7	-21.1
Net volume, Dec. 31, 1957	2,789.0	144.4	2,634.0	5,645.0	11,212.4
Percent change	-0.8	-4.6	+2.9	-1.2	-0.2

GROWING STOCK (In thousand cords)

Net volume, Jan. 1, 1957	20,552	692	12,510	31,708	65,462
Total growth	1,391	30	754	1,336	3,511
Mortality	190	6	72	330	598
Net growth	1,201	24	682	1,006	2,913
Timber cut	1,287	29	257	881	2,454
Loss or gain	-86	-5	+425	+125	+459
Net volume, Dec. 31, 1957	20,466	687	12,935	31,833	65,921
Percent change	-0.4	-0.7	+3.4	+0.4	+0.7

GROWING STOCK (In million cubic feet)

Net volume, Jan. 1, 1957	1,398.4	53.4	907.7	2,294.5	4,654.0
Total growth	85.4	2.3	49.3	89.1	226.1
Mortality	12.7	0.5	5.2	24.1	42.5
Net growth	72.7	1.8	44.1	65.0	183.6
Timber cut	85.6	2.7	19.2	66.6	174.1
Loss or gain	-12.9	-0.9	+24.9	-1.6	+9.5
Net volume, Dec. 31, 1957	1,385.5	52.5	932.6	2,292.9	4,663.5
Percent change	-0.9	-1.7	+2.7	-0.1	+0.2

Table 21a.--Net annual change in volume by species group, Northern Piedmont, 1957

SAWTIMBER (In million board-feet)					
Item	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1, 1957	811.0	54.0	1,052.4	2,968.0	4,885.4
Total growth	54.1	2.2	64.1	128.1	248.5
Mortality	5.4	0.3	5.6	39.5	50.8
Net growth	48.7	1.9	58.5	88.6	197.7
Timber cut	82.0	10.0	27.5	113.2	232.7
Loss or gain	-33.3	-8.1	+31.0	-24.6	-35.0
Net volume, Dec. 31, 1957	777.7	45.9	1,083.4	2,943.4	4,850.4
Percent change	-4.1	-15.0	+2.9	-0.8	-0.7
GROWING STOCK (In thousand cords)					
Net volume, Jan. 1, 1957	5,949	249	4,733	15,387	26,318
Total growth	407	11	275	620	1,313
Mortality	55	2	27	162	246
Net growth	352	9	248	458	1,067
Timber cut	561	21	87	385	1,054
Loss or gain	-209	-12	+161	+73	+13
Net volume, Dec. 31, 1957	5,740	237	4,894	15,460	26,331
Percent change	-3.5	-4.8	+3.4	+0.5	+0.0
GROWING STOCK (In million cubic feet)					
Net volume, Jan. 1, 1957	399.2	19.3	347.7	1,123.2	1,889.4
Total growth	24.7	0.9	18.2	41.9	85.7
Mortality	3.6	0.2	2.0	12.0	17.8
Net growth	21.1	0.7	16.2	29.9	67.9
Timber cut	36.5	2.0	6.6	29.3	74.4
Loss or gain	-15.4	-1.3	+9.6	+0.6	-6.5
Net volume, Dec. 31, 1957	383.8	18.0	357.3	1,123.8	1,882.9
Percent change	-3.9	-6.7	+2.8	+0.1	-0.3

Table 21b.--Net annual change in volume by species group, Southern Piedmont, 1957

SAWTIMBER (In million board-feet)

Item	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Net volume, Jan. 1, 1957	1,999.9	97.4	1,507.1	2,743.7	6,348.1
Total growth	147.4	4.5	94.4	128.7	375.0
Mortality	13.2	0.6	8.0	36.5	58.3
Net growth	134.2	3.9	86.4	92.2	316.7
Timber cut	122.8	2.8	42.9	134.3	302.8
Loss or gain	+11.4	+1.1	+43.5	-42.1	+13.9
Net volume, Dec. 31, 1957	2,011.3	98.5	1,550.6	2,701.6	6,362.0
Percent change	+0.6	+1.1	+2.9	-1.5	+0.2

GROWING STOCK (In thousand cords)

Net volume, Jan. 1, 1957	14,603	443	7,777	16,321	39,144
Total growth	984	19	479	716	2,198
Mortality	135	4	45	168	352
Net growth	849	15	434	548	1,846
Timber cut	726	8	170	496	1,400
Loss or gain	+123	+7	+264	+52	+446
Net volume, Dec. 31, 1957	14,726	450	8,041	16,373	39,590
Percent change	+0.8	+1.6	+3.4	+0.3	+1.1

GROWING STOCK (In million cubic feet)

Net volume, Jan. 1, 1957	999.2	34.1	560.0	1,171.3	2,764.6
Total growth	60.7	1.4	31.1	47.2	140.4
Mortality	9.1	0.3	3.2	12.1	24.7
Net growth	51.6	1.1	27.9	35.1	115.7
Timber cut	49.1	0.7	12.6	37.3	99.7
Loss or gain	+2.5	+0.4	+15.3	-2.2	+16.0
Net volume, Dec. 31, 1957	1,001.7	34.5	575.3	1,169.1	2,780.6
Percent change	+0.3	+1.2	+2.7	-0.2	+0.6

Table 22.--Average annual change in volume per acre by stand size and forest type,
Entire Piedmont, 1957

Stand size and forest type	Sawtimber (in board-feet)				Growing stock (in standard cords)			
	Growth	Mortality	Timber cut ¹ / ₁	Net change	Growth	Mortality	Timber cut ¹ / ₁	Net change
Sawtimber stands								
Yellow pine	225	27	362	-164	0.90	0.15	1.70	-.95
Oak-pine	223	35	118	70	.79	.11	.54	.14
Oak-hickory	156	44	141	-29	.54	.17	.44	-.07
Oak-gum-cypress	185	41	137	7	.66	.14	.35	.17
All types	178	36	181	-39	.64	.15	.69	-.20
Poletimber stands								
Yellow pine	47	6	19	22	.90	.05	.32	.53
Oak-pine	43	19	3	21	.48	.10	.04	.34
Oak-hickory	55	8	8	39	.48	.06	.05	.37
Oak-gum-cypress	45	14	13	18	.56	.09	.04	.43
All types	51	9	12	30	.63	.06	.14	.43
Other stands								
Yellow pine	1	13	--	-12	.05	.05	--	.00
Oak-pine	2	9	--	-7	.04	.02	--	.02
Oak-hickory	9	6	--	3	.06	.08	--	-.02
Oak-gum-cypress	1	9	--	-8	.07	.06	--	.01
All types	4	10	--	-6	.06	.06	--	.00
All stands								
Yellow pine	83	17	103	-37	.71	.09	.60	.02
Oak-pine	104	23	44	37	.54	.09	.22	.23
Oak-hickory	99	24	72	3	.47	.11	.23	.13
Oak-gum-cypress	109	27	74	8	.53	.11	.19	.23
All types	95	21	78	-4	.55	.10	.34	.11

¹/ Excludes timber removed in clearing land.

Table 23.--County area by broad use class, 1957

County	Total area ^{1/}	Nonforest area		Forest land		
		Land	Water	Non- commercial	Commercial	
	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Percent</u>
Albemarle	476.8	180.7	0.7	14.1	281.3	59.1
Amelia	234.2	69.6	--	0.1	164.5	70.2
Amherst	300.8	76.2	3.6	0.5	220.5	74.2
Appomattox	220.8	63.1	1.8	0.6	155.3	70.9
Bedford	499.8	189.5	1.0	5.1	304.2	61.0
Buckingham	372.5	71.2	5.8	--	295.5	80.6
Campbell	343.7	122.1	1.3	(2/)	220.3	64.3
Charlotte	301.4	88.5	2.7	--	210.2	70.4
Culpeper	248.9	133.1	--	--	115.8	46.5
Cumberland	186.9	51.5	0.7	--	134.7	72.3
Fairfax	270.7	118.7	6.7	1.1	144.2	54.6
Fauquier	422.4	255.9	--	2.0	164.5	38.9
Fluvanna	184.3	59.1	4.5	--	120.7	67.1
Franklin	461.5	168.4	2.1	0.9	290.1	63.1
Goochland	188.8	51.3	5.2	--	132.3	72.1
Greene	97.9	35.7	--	13.8	48.4	49.4
Halifax	517.1	190.0	4.9	1.1	321.1	62.7
Henry	246.4	80.4	5.5	1.7	158.8	65.9
Loudoun	330.9	232.4	0.1	0.2	98.2	29.7
Louisa	330.9	102.1	0.5	--	228.3	69.1
Lunenburg	283.5	82.8	--	--	200.7	70.8
Madison	209.3	89.6	--	32.4	87.3	41.7
Mecklenburg	432.0	160.0	37.8	0.1	234.1	59.4
Nelson	301.4	79.3	1.1	1.2	219.8	73.2
Nottoway	197.1	53.9	0.3	0.7	142.2	72.3
Orange	227.2	84.1	--	0.2	142.9	62.9
Patrick	300.2	80.8	1.7	6.3	211.4	70.8
Pittsylvania	654.1	246.1	1.6	0.1	406.3	62.3
Powhatan	174.1	38.9	3.8	--	131.4	77.2
Prince Edward	228.5	62.0	--	(2/)	166.5	72.9
Prince William	226.6	85.9	4.9	17.8	118.0	53.2
Rappahannock	170.9	74.4	--	31.7	64.8	37.9
Spotsylvania	265.6	71.3	0.8	1.9	191.6	72.4
Stafford	177.3	41.5	4.3	17.6	113.9	65.8
Total Piedmont	10,084.5	3,590.1	103.4	151.2	6,239.8	62.5

^{1/} Gross area from Bureau of the Census, 1950. Excludes Arlington County and independent cities.

^{2/} Less than 50 acres.

Table 24.--Ownership of commercial forest land by county, 1957

County	Private		Public					
			National forest	Other Federal	State	County, city, town	Total public	
	<u>Thousand acres</u>	<u>Percent</u>	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Percent</u>
Albemarle	279.6	99.4	--	--	0.2	1.5	1.7	0.6
Amelia	164.5	100.0	--	--	--	--	--	--
Amherst	166.5	75.5	53.2	--	0.5	0.3	54.0	24.5
Appomattox	146.2	94.1	--	--	9.1	--	9.1	5.9
Bedford	288.1	94.7	14.5	--	--	1.6	16.1	5.3
Buckingham	283.0	95.8	2.7	--	9.8	--	12.5	4.2
Campbell	220.1	99.9	--	--	--	0.2	0.2	0.1
Charlotte	208.6	99.2	--	1.6	--	--	1.6	0.8
Culpeper	115.8	100.0	--	--	--	--	--	--
Cumberland	119.3	88.6	--	--	15.4	--	15.4	11.4
Fairfax	138.0	95.7	--	6.2	--	--	6.2	4.3
Fauquier	163.3	99.3	--	1.2	--	--	1.2	0.7
Fluvanna	120.7	100.0	--	--	(1/)	--	(1/)	--
Franklin	287.4	99.1	--	2.7	--	--	2.7	0.9
Goochland	132.2	99.9	--	--	0.1	(1/)	0.1	0.1
Greene	48.4	100.0	--	--	--	--	--	--
Halifax	311.6	97.0	--	9.4	0.1	--	9.5	3.0
Henry	157.8	99.4	--	0.9	--	0.1	1.0	0.6
Loudoun	98.2	100.0	--	--	--	--	--	--
Louisa	228.3	100.0	--	--	--	--	--	--
Lunenburg	200.6	100.0	--	0.1	--	--	0.1	(1/)
Madison	87.3	100.0	--	--	--	--	--	--
Mecklenburg	208.8	89.2	--	24.7	0.3	0.3	25.3	10.8
Nelson	205.7	93.6	12.9	--	(1/)	1.2	14.1	6.4
Nottoway	124.8	87.8	--	17.3	0.1	--	17.4	12.2
Orange	142.9	100.0	--	--	--	--	--	--
Patrick	203.7	96.4	--	2.7	--	5.0	7.7	3.6
Pittsylvania	405.8	99.9	--	--	(1/)	0.5	0.5	0.1
Powhatan	129.5	98.6	--	--	1.9	--	1.9	1.4
Prince Edward	159.7	95.9	--	--	6.8	--	6.8	4.1
Prince William	98.4	83.4	--	19.2	0.4	--	19.6	16.6
Rappahannock	64.8	100.0	--	--	--	--	--	--
Spotsylvania	191.6	100.0	--	--	--	--	--	--
Stafford	99.3	87.2	--	14.5	--	0.1	14.6	12.8
Total Piedmont	6,000.5	96.2	83.3	100.5	44.7	10.8	239.3	3.8

1/ Less than 50 acres, or 0.05 percent.

Table 25.--Net volume^{1/} of sawtimber by county and species group, 1957

(In million board-feet)

County	Softwoods ^{2/}	Gum, yellow- poplar, and soft maple ^{3/}	Oaks and other hard hardwoods	All species
Albemarle	100.3	120.5	292.9	513.7
Amelia	235.9	132.3	131.1	499.3
Amherst	57.7	49.0	219.0	325.7
Appomattox	80.6	56.0	127.7	264.3
Bedford	98.2	86.0	198.6	382.8
Buckingham	107.8	56.4	252.6	416.8
Campbell	59.7	54.1	182.7	296.5
Charlotte	98.3	127.4	180.2	405.9
Culpeper	76.7	34.6	113.0	224.3
Cumberland	76.2	13.7	176.1	266.0
Fairfax	77.6	92.7	295.5	465.8
Fauquier	38.4	42.7	198.0	279.1
Fluvanna	54.0	64.6	97.8	216.4
Franklin	159.3	93.5	184.3	437.1
Goochland	19.1	80.4	117.4	216.9
Greene	16.7	20.2	71.4	108.3
Halifax	233.2	165.9	224.2	623.3
Henry	57.7	31.9	51.5	141.1
Loudoun	13.6	53.3	272.6	339.5
Louisa	106.0	71.3	192.0	369.3
Lunenburg	156.4	94.7	95.9	347.0
Madison	19.6	29.2	128.4	177.2
Mecklenburg	137.8	130.3	174.8	442.9
Nelson	31.2	115.0	199.8	346.0
Nottoway	127.7	58.7	77.1	263.5
Orange	58.9	73.6	157.0	289.5
Patrick	80.3	73.7	118.2	272.2
Pittsylvania	264.3	198.5	354.9	817.7
Powhatan	75.0	66.4	131.6	273.0
Prince Edward	48.9	67.6	82.2	198.7
Prince William	85.6	38.3	207.2	331.1
Rappahannock	5.0	44.5	117.8	167.3
Spotsylvania	74.2	95.9	121.4	291.5
Stafford	30.4	26.6	166.8	223.8
Total Piedmont	2,962.3	2,559.5	5,711.7	11,233.5

1/ Log scale, International 1/4-inch rule.

2/ Includes white pine, hemlock, and redcedar.

3/ Includes other soft hardwoods.

Table 26.--Net volume^{1/} of sawtimber by county, broad species group,
and diameter group, 1957

(In million board-feet)

County	Softwoods			Hardwoods		
	9.0-14.9 inches	15.0-18.9 inches	19.0+ inches	11.0-14.9 inches	15.0-18.9 inches	19.0+ inches
Albemarle	84.8	8.5	7.0	213.0	120.0	80.4
Amelia	168.9	54.9	12.1	136.7	54.5	72.2
Amherst	47.4	10.3	--	136.0	59.3	72.7
Appomattox	80.6	--	--	109.5	38.2	36.0
Bedford	78.4	19.8	--	153.2	53.3	78.1
Buckingham	91.8	3.4	12.6	181.5	82.6	44.9
Campbell	56.1	3.6	--	141.9	60.2	34.7
Charlotte	98.3	--	--	157.9	69.7	80.0
Culpeper	70.2	6.5	--	66.1	47.2	34.3
Cumberland	69.1	7.1	--	69.4	21.2	99.2
Fairfax	70.0	7.6	--	160.7	155.1	72.4
Fauquier	38.4	--	--	96.1	80.3	64.3
Fluvanna	54.0	--	--	84.7	40.2	37.5
Franklin	125.0	17.6	16.7	165.6	64.5	47.7
Goochland	15.9	3.2	--	112.4	48.8	36.6
Greene	15.2	1.5	--	37.5	41.8	12.3
Halifax	188.2	14.6	30.4	218.0	114.7	57.4
Henry	42.4	15.3	--	53.0	30.4	--
Loudoun	13.6	--	--	93.7	97.5	134.7
Louisa	102.3	3.7	--	194.7	48.8	19.8
Lunenburg	149.6	6.8	--	129.2	49.2	12.2
Madison	19.6	--	--	52.2	40.9	64.5
Mecklenburg	122.8	15.0	--	159.5	104.8	40.8
Nelson	16.9	14.3	--	126.9	100.8	87.1
Nottoway	101.9	19.8	6.0	64.0	38.8	33.0
Orange	55.4	3.5	--	98.9	54.9	76.8
Patrick	53.5	19.0	7.8	80.6	75.5	35.8
Pittsylvania	190.4	48.7	25.2	207.1	154.0	192.3
Powhatan	65.8	9.2	--	133.0	61.0	4.0
Prince Edward	48.9	--	--	59.2	43.7	46.9
Prince William	85.6	--	--	97.1	92.5	55.9
Rappahannock	2.3	2.7	--	52.6	47.4	62.3
Spotsylvania	70.8	3.4	--	163.0	37.7	16.6
Stafford	30.4	--	--	90.1	70.1	33.2
Total Piedmont	2,524.5	320.0	117.8	4,095.0	2,299.6	1,876.6

^{1/} Log scale, International 1/4-inch rule.

Table 27.--Net volume^{1/} of all timber by county, species group, and diameter group,

1957

(In thousand cords)

GROWING STOCK

County	Yellow pines		Other softwoods		Soft hardwoods		Hard hardwoods		All species
	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	
Albemarle	409	65	53	34	241	230	1,184	638	2,854
Amelia	788	270	6	--	337	233	520	261	2,415
Amherst	202	34	18	15	51	85	724	468	1,597
Appomattox	520	40	14	--	62	109	585	230	1,560
Bedford	721	62	6	--	482	171	726	393	2,561
Buckingham	474	84	34	--	236	96	1,410	460	2,794
Campbell	536	9	--	--	200	86	850	341	2,022
Charlotte	808	53	12	--	259	267	503	359	2,261
Culpeper	320	90	5	--	113	68	411	253	1,260
Cumberland	831	57	30	--	117	13	337	353	1,738
Fairfax	594	54	--	--	152	189	428	669	2,086
Fauquier	241	16	4	--	143	98	650	378	1,530
Fluvanna	315	20	--	--	143	133	398	191	1,200
Franklin	940	51	60	67	360	139	642	367	2,626
Goochland	292	8	6	--	119	184	512	236	1,357
Greene	74	11	2	3	29	44	129	155	447
Halifax	1,387	164	31	--	569	298	901	412	3,762
Henry	848	52	2	--	110	59	286	92	1,449
Loudoun	107	--	--	--	39	120	469	625	1,360
Louisa	612	53	19	--	329	113	904	309	2,339
Lunenburg	924	52	14	--	399	144	529	147	2,209
Madison	109	8	--	--	90	55	250	299	811
Mecklenburg	1,011	77	12	--	369	248	807	336	2,860
Nelson	131	27	13	12	353	228	483	439	1,686
Nottoway	457	145	12	--	212	111	220	161	1,318
Orange	476	50	40	--	94	153	696	278	1,787
Patrick	246	28	20	58	229	136	717	267	1,701
Pittsylvania	1,753	229	38	8	769	376	969	761	4,903
Powhatan	349	26	13	--	191	127	458	245	1,409
Prince Edward	605	6	6	--	130	133	520	156	1,556
Prince William	522	41	9	--	80	68	674	437	1,831
Rappahannock	6	6	2	--	114	84	164	277	653
Spotsylvania	648	32	14	--	395	199	681	207	2,176
Stafford	364	12	--	--	156	41	451	320	1,344
Total Piedmont	18,620	1,932	495	197	7,672	4,838	20,188	11,520	65,462

^{1/} Sound wood and bark.

Table 27.---Net volume^{1/} of all timber by county, species group, and diameter group,
1957 (continued)

(In thousand cords)

OTHER MATERIAL

County	Yellow pines		Other softwoods		Soft hardwoods		Hard hardwoods		All species
	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	5 - 12 inches	13+ inches	
Albemarle	41	--	--	--	21	40	181	63	346
Amelia	40	4	--	--	60	56	106	12	278
Amherst	87	--	6	--	48	9	240	96	486
Appomattox	56	5	--	--	3	66	49	15	194
Bedford	84	8	2	5	116	50	368	202	835
Buckingham	46	42	--	--	37	8	200	31	364
Campbell	71	4	--	--	15	17	139	47	293
Charlotte	129	25	--	--	28	--	26	59	267
Culpeper	69	15	--	--	54	31	105	18	292
Cumberland	118	--	2	--	23	--	27	18	188
Fairfax	103	4	--	--	23	38	60	152	380
Fauquier	189	34	--	--	55	8	130	100	516
Fluvanna	40	--	--	--	24	87	123	48	322
Franklin	126	9	38	8	160	92	210	149	792
Goochland	48	--	5	--	5	10	72	--	140
Greene	9	--	--	--	10	22	27	36	104
Halifax	46	10	--	--	66	16	83	30	251
Henry	166	7	--	4	54	16	210	57	514
Loudoun	26	--	--	--	22	11	49	80	188
Louisa	90	24	--	4	114	25	103	63	423
Lunenburg	73	--	--	--	124	12	88	44	341
Madison	27	3	4	--	12	33	182	118	379
Mecklenburg	39	9	--	--	102	17	44	54	265
Nelson	46	8	6	10	200	21	356	246	893
Nottoway	24	8	--	--	26	8	19	17	102
Orange	25	--	--	--	21	--	61	6	113
Patrick	32	12	2	--	181	46	285	185	743
Pittsylvania	138	18	--	--	41	40	77	89	403
Powhatan	24	--	--	--	36	--	27	11	98
Prince Edward	45	5	--	--	75	10	44	71	250
Prince William	39	--	--	--	31	15	25	31	141
Rappahanock	3	--	12	--	15	18	79	47	174
Spotsylvania	104	5	--	--	33	44	55	47	288
Stafford	38	--	--	--	7	16	37	28	126
Total Piedmont	2,241	259	77	31	1,842	882	3,887	2,270	11,489

^{1/} Sound wood and bark.

Table 28.--Average annual volume of sawtimber cut by county and species group^{1/}

(In million board-feet)

County	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Albemarle	4.0	1.2	--	3.6	8.8
Amelia	1.6	0.9	--	--	2.5
Amherst	12.2	0.4	1.7	6.8	21.1
Appomattox	5.1	--	7.3	3.2	15.6
Bedford	5.0	--	4.3	12.8	22.1
Buckingham	8.1	--	--	8.6	16.7
Campbell	9.4	--	3.0	4.2	16.6
Charlotte	6.2	--	2.2	7.6	16.0
Culpeper	1.9	--	--	4.7	6.6
Cumberland	2.6	--	--	9.3	11.9
Fairfax	1.0	0.5	0.3	15.6	17.4
Fauquier	5.3	0.8	--	8.6	14.7
Fluvanna	5.4	--	--	4.4	9.8
Franklin	6.8	1.6	4.3	9.8	22.5
Goochland	10.8	--	4.1	4.3	19.2
Greene	--	--	2.2	2.0	4.2
Halifax	19.5	--	6.3	34.3	60.1
Henry	9.0	--	--	5.1	14.1
Loudoun	--	0.1	--	6.0	6.1
Louisa	6.9	--	1.1	12.8	20.8
Lunenburg	9.9	0.3	6.0	6.4	22.6
Madison	0.7	--	4.8	4.1	9.6
Mecklenburg	9.2	--	1.4	16.6	27.2
Nelson	6.2	7.0	7.7	2.9	23.8
Nottoway	20.4	--	1.8	4.4	26.6
Orange	4.6	--	2.5	2.5	9.6
Patrick	0.3	--	0.7	1.1	2.1
Pittsylvania	1.9	--	1.4	6.3	9.6
Powhatan	3.9	--	4.2	1.4	9.5
Prince Edward	3.9	--	--	3.2	7.1
Prince William	--	--	--	9.0	9.0
Rappahannock	0.3	--	--	1.4	1.7
Spotsylvania	10.3	--	0.6	2.1	13.0
Stafford	12.4	--	2.5	22.4	37.3
Total Piedmont	204.8	12.8	70.4	247.5	535.5

^{1/} Estimates of timber cut by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

Table 29.--Average annual volume of growing stock cut by county and
species group^{1/}

(In thousand cords)

County	Yellow pines	Other softwoods	Soft hardwoods	Hard hardwoods	All species
Albemarle	43	3	1	11	58
Amelia	5	2	1	--	8
Amherst	63	1	8	31	103
Appomattox	25	--	16	12	53
Bedford	55	--	28	49	132
Buckingham	46	--	--	37	83
Campbell	42	--	10	13	65
Charlotte	49	--	11	22	82
Culpeper	6	--	--	15	21
Cumberland	18	--	--	26	44
Fairfax	13	1	5	65	84
Fauquier	19	2	1	36	58
Fluvanna	50	--	1	17	68
Franklin	46	5	17	37	105
Goochland	92	1	10	10	113
Greene	--	--	5	5	10
Halifax	96	--	24	103	223
Henry	41	--	--	15	56
Loudoun	--	--	--	14	14
Louisa	60	--	4	41	105
Lunenburg	55	1	20	23	99
Madison	23	--	10	13	46
Mecklenburg	48	--	10	68	126
Nelson	25	13	20	10	68
Nottoway	78	--	11	27	116
Orange	31	--	10	14	55
Patrick	2	--	5	19	26
Pittsylvania	62	--	6	23	91
Powhatan	30	--	10	6	46
Prince Edward	28	--	1	16	45
Prince William	1	--	--	27	28
Rappahannock	4	--	--	3	7
Spotsylvania	87	--	3	9	99
Stafford	44	--	9	64	117
Total Piedmont	1,287	29	257	881	2,454

^{1/} Estimates of timber cut by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

DEFINITION OF TERMS

Land-Use Classes

Forest land: Includes (a) lands which are at least 10 percent stocked with trees of any size and capable of producing sawtimber or other wood products, and (b) lands from which the trees described in (a) have been removed to less than 10-percent stocking but which have not been developed for other use; subdivided into the following classes:

Commercial: Forest land which is (a) producing, or physically capable of producing, usable crops of wood (usually sawtimber), (b) economically available now or in the future, and (c) not withdrawn from timber use.

Noncommercial: Forest land (a) withdrawn from timber utilization through statute, ordinance, or administrative order but which otherwise qualifies as commercial forest land, or (b) incapable of yielding usable wood products (usually sawtimber) because of adverse site conditions, or so physically inaccessible as to be unavailable economically in the foreseeable future.

Nonforest land: Includes land under cultivation or in pasture where the timber has been cleared to less than 10 percent stocking, idle or abandoned agricultural land, marsh land, and land in urban, residential, or industrial areas, school yards, cemeteries, roads, railroads, and other rights-of-way.

Water: Includes lakes, bays, and estuaries over 40 acres in size, and streams, canals, and sloughs at least one-eighth of a mile in width which are classed as "inland water" by the Bureau of the Census. Smaller lakes and ponds between one acre and 40 acres in size, and waterways between 120 feet and 660 feet in width, which are classed as land area by the Bureau of the Census, are also included as water areas.

Forest Types

Forest type is determined on the basis of cubic volume for all stand sizes except seedlings and saplings (stand size 4), in which case the number of stems is the criterion.

Yellow pine types: Forests in which 50 percent or more of the cubic volume or number of stems in the stand is loblolly, pond, shortleaf, or Virginia pine. In mixtures the predominating species determines the type.

Hardwood-pine type: Forests in which 50 percent or more of the stand is in hardwoods, but in which southern yellow pine species make up 25 to 49 percent of the stand.

Oak-hickory type: Upland hardwood forests in which 50 percent or more of the stand is composed of upland oak, hickory, yellow-poplar, soft maple, and other hardwood species, except in cases where yellow pines make up 25 to 49 percent and the stand would be classified as oak-pine.

Oak-gum-cypress type: Bottomland forests in which 50 percent or more of the stand is tupelo, blackgum, sweetgum, ash, lowland oak, elm, soft maple, cypress, and other associated species, except where pines comprise 25 to 49 percent of the stand.

Stand-Size Classes

Sawtimber: Stands containing at least 1,500 board-feet net volume per acre, International 1/4-inch log rule, in sound, live, softwood trees 9.0 inches d.b.h. or larger, or hardwood trees 11.0 inches d.b.h. or larger. Two classes of sawtimber stands are recognized:

Large sawtimber: Stands of sawtimber having more than 50 percent of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Small sawtimber: Stands of sawtimber having 50 percent or more of the net board-foot volume in trees smaller than 15.0 inches d.b.h.

Poletimber: Stands failing to meet the minimum sawtimber specifications, but at least 10 percent stocked with trees 5.0 inches d.b.h. or larger and with at least half the minimum stocking in pole-size trees.

Seedling and saplings: Stands not qualifying as sawtimber or poletimber stands, but having at least a 10-percent stocking of trees of commercial species and with half the minimum stocking in seedlings and saplings.

Nonstocked and other areas: Forest areas not qualifying as sawtimber, poletimber, or seedling and sapling stands.

Diameters

D.b.h. (diameter at breast height): Stem diameter in inches, outside bark, measured at 4-1/2 feet above the ground.

Diameter class: All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint, e.g., trees 7.0 to and including 8.9 inches are included in the 8-inch class. Corresponding limits apply to other diameter classes.

Timber Quality Classification

Growing Stock

Sawtimber trees: Live softwood trees 9.0 inches d.b.h. or larger and hardwood trees 11.0 inches d.b.h. or larger, with a sound volume of at least 50 percent of the gross board-foot volume up to the point of minimum saw-log merchantability. To be considered sound, a saw log must be at least 8 feet long, must be at least 50 percent sound, and must meet the following additional requirements:

Softwood logs^{1/} must have a scaling diameter of 6 inches or more, and sweep or crook must not exceed one-third of the scaling diameter per 8 feet of log length.

Hardwood logs must have a scaling diameter of 8 inches or more and must pass specifications^{2/} for standard lumber logs or tie and timber logs.

Sound poletimber trees: Straight-boled trees between 5.0 inches d.b.h. and sawtimber size that can be expected to become sawtimber.

Sound saplings: Trees 1.0 inch to 4.9 inches d.b.h. which show promise of growing into sawtimber.

Other Material

Sound cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of species, poor form, excessive limbiness, or other sound defect.

Rotten cull trees: Live trees of all sizes that are unmerchantable for saw logs now or prospectively because of rotten defect.

Species Groups

Yellow pines: Includes loblolly, pond, shortleaf, pitch, Table-Mountain, and Virginia pine.

Other softwoods: White pine, hemlock, and eastern redcedar.

Soft hardwoods: Blackgum, tupelo, yellow-poplar, sweetgum, cottonwood, soft maple, basswood, magnolia, sweetbay, willow, elm, hackberry, sycamore, and black cherry.

Hard hardwoods: All the oaks, hickories, ash, beech, hard maple, river birch, black walnut, black locust, honey locust, mulberry, sourwood, dogwood, holly, and persimmon.

^{1/} For detailed specifications of log grades, see "Interim log grades for southern pine." Southern Forest Expt. Station, 18 pp. 1953.

^{2/} For detailed hardwood log grade specifications, see "Hardwood log grades for standard lumber: proposals and results." U. S. Forest Products Laboratory, D1737. 1949.

Volume Estimates

Board-foot volume: The volume in board-feet, measured by the International 1/4-inch rule, exclusive of defect, of that portion of sound sawtimber trees between the stump and the upper limit of merchantability for saw logs.

Volume in cords: For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. or larger, between stump and a minimum top stem diameter of 4.0 inches inside bark. Similar volumes are given for cull trees.

Volume in cubic feet: Cubic-foot volume of the same material shown in cords except that bark is not included.

International 1/4-inch log rule: A rule for estimating the board-foot volume of 4-foot log sections, according to the formula $V = .905 (0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord: A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, about 7 1/4 cubic feet of solid wood.

Growth and Timber Cut

Net growth.--The growth on trees that were of volume size at the beginning of the year and the ingrowth resulting from smaller trees growing into volume size during the year, minus the partial loss of growth on trees that died or were cut during the year and the loss of volume in trees dying from natural causes during the year. Net growth is based on growth of sound trees. Growth on "Other material" is not included.

In board-feet: The change during the calendar year in sawtimber volume resulting from growth, ingrowth, and mortality losses.

In cubic feet or cords: The change during the calendar year in the volume of all sound trees 5.0 inches and larger resulting from growth, ingrowth, and mortality losses.

Timber cut.--The volume of timber cut is based on the measurement and tally of stumps found on regular ground sample plots. Stumps of all trees cut during the past 3-year period are recorded and the measurements are converted into equivalent tree volume. The average yearly volume of timber cut for the 3-year period is then taken as the annual estimate. Board-foot volumes include the saw-log portion of all sawtimber-size trees which were cut. Estimates in cubic feet or cords include the entire stem from stump to 4.0-inch top of all sound trees 5.0 inches in diameter and larger. Timber cut from cull or dead trees is not included.

Stocking

Stocking is the extent to which growing space is effectively utilized by trees. The number of stems present by d.b.h. classes was used as a basis for stocking classification. Areas having the minimum numbers of trees listed below, either in a single diameter class or proportionately in any combinations of diameter classes, were considered fully stocked.

<u>D.b.h.</u>	<u>Minimum number trees per acre</u>
Seedlings	1,000
2 inches	800
4 inches	590
6 inches	400
8 inches	240
10 inches	155
12 inches	115
14 inches	90

RELIABILITY OF FOREST SURVEY DATA

In general, the errors which affect the accuracy of Forest Survey area and timber volume estimates arise from two sources. These may be described as (1) sampling errors which result from using sampling procedures rather than making a complete inventory or canvass, and (2) non-sampling errors which arise from human mistakes in judgment, measurement, recording, or arithmetic.

In Forest Survey work a diligent effort is made to maintain a high degree of accuracy in the collection and compilation of data. The sampling errors are held to a specified minimum through survey design and sampling technique. These errors are the only measurable errors involved in computing the reliability of the data. The non-sampling errors are minimized or eliminated through training, supervision, field check cruises, and complete editing and machine verification in compiling the data.

Preliminary estimates of area by land-use class were based on examination of about 68,800 points systematically spaced on aerial photographs of the Virginia Piedmont. Subsamples of 1,709 photo points classified as forest and 676 in other land uses were established as sample plots on the ground. These ground plots provided adjustments for changes in land use since the date of photography, and supplied detailed measurements and observations needed in evaluating forest conditions.

Forest area.--The sampling intensity of the 1957 survey provided an estimate of the total forest area with a standard error of ± 0.7 percent. The probabilities were two out of three that the actual forest area was within ± 0.7 percent of the estimated acreage. The standard error per million acres was ± 1.8 percent.

Cubic volume.--The standard error of the net cubic-foot volume estimate was ± 2.6 percent, or ± 5.6 percent per billion cubic feet. Here again, the probabilities were two out of three that the actual volume did not vary from the estimated volume by more than these percentages. The error of the volume in cords was not computed, but it should have been approximately the same as for cubic volume.

Board-foot volume.--The standard error of the total board-foot volume estimate was ± 3.2 percent.

Growth.--Estimates of timber growth were based on measurements of radial growth on 3,026 sample trees, and on mortality data taken on sample plots. Because of technical problems involved, no attempt was made to compute the sampling error of growth estimates.

Timber cut.--Estimates of the amount of timber cut were based on the number, size, and species of stumps tallied on cutover plots. Stumps of all trees cut during the 3-year period preceding the date of inventory were included, and the measurements were converted into tree volume. The average volume of timber cut for the 3-year period was taken as the annual estimate. The standard error for the total volume of growing stock cut was ± 7.7 percent, or ± 3.2 percent per billion cubic feet.

Use of county data.--The tables showing forest area, timber volumes, and timber cut by county are included to permit grouping of the data in any desired area combinations. In designing the survey, provision was made for controlling the range of sampling error on a county basis. However, comparison or use of individual county statistics should be avoided because of the possibility that they may be subject to considerable error. It is recommended that area or volume data for a minimum of five counties be combined, and that at least 10 counties be used when working with data on timber cut.

The actual range of errors in county data are as follows:

<u>Item</u>	<u>Percent of error</u>	
	<u>Low</u>	<u>High</u>
Forest area	± 2.4	± 5.9
Growing stock volume	± 8.3	± 17.0
Board-foot volume	± 9.8	± 19.4

HOW THE FOREST INVENTORY IS MADE

The present system of inventory is a two-step method which includes land-use classification of points on aerial photographs followed by the cruising of ground sample plots. The county is the basic work unit. The detailed procedure is as follows:



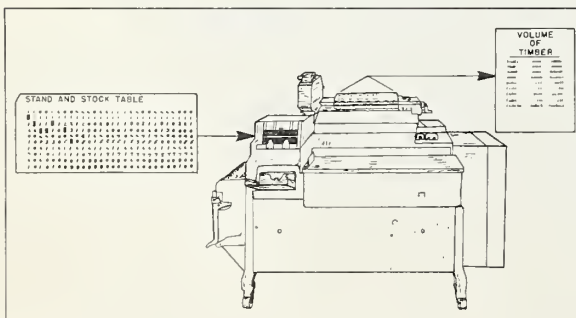
1. Preliminary estimates of the acreage of land in forests and other land-use classes are obtained by classifying points printed on every third aerial photograph in alternate flight lines within a county. The proportion of points falling in each class is used to estimate the acreage. This estimate is later checked and revised through the use of ground plots.



2. Ground sample plots are selected in a systematic manner from the forest land classifications made in Step 1, using an interval which will provide sufficient plots to meet established limits of error per billion cubic feet of timber. This results in a proportional sample of all existing timber stands. Timber cruisers make a detailed description and tally of the ground plots to obtain data on timber volume, quality, stocking, mortality, and timber cut. Samples of agricultural and other photo classifications are also checked on the ground to verify or adjust the area estimates based on these classifications.



3. Growth estimates are based on increment borings taken proportionally from sample trees of various diameters and species in each forest type and stand class. The volume of timber cut is computed from a tally of the stumps of trees cut on the plots during a specified period.



4. All field data are sent to Asheville for editing and are placed on punch cards for machine sorting and tabulation. Final estimates are based on statistical summaries of the data.

Forest Survey Reports Published Since 1945

Forest Statistics:

- No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina
- No. 26 - 1946 Commodity Drain by County from South Carolina Forests
- No. 28 - South Carolina's Forest Resources, 1947
- No. 30 - Forest Resources of Northeast Florida, 1949
- No. 31 - Forest Resources of Central Florida, 1949
- No. 32 - Forest Resources of Northwest Florida, 1949
- No. 33 - Forest Resources of South Florida, 1949
- No. 34 - Timber Production and Commodity Drain from Florida's Forests, 1948
- No. 36 - Forest Statistics for Florida, 1949
- No. 37 - Forest Statistics for Southwest Georgia, 1951
- No. 39 - Forest Statistics for Southeast Georgia, 1952
- No. 40 - Forest Statistics for Central Georgia, 1952
- No. 41 - Forest Statistics for the Southern Coastal Plain of North Carolina, 1952
- No. 42 - Forest Statistics for North Central and North Georgia, 1953
- No. 44 - Forest Statistics for Georgia, 1951-53
- No. 45 - Forest Statistics for the Northern Coastal Plain of North Carolina, 1955
(out of print)
- No. 46 - Forest Statistics for the Mountain Region of North Carolina, 1955
- No. 48 - Forest Statistics for the Piedmont of North Carolina, 1956
- No. 49 - North Carolina's Timber Supply, 1955
- No. 50 - Forest Statistics for the Coastal Plain of Virginia, 1956

Pulpwood Production:

- No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia
- No. 23 - 1946 Pulpwood Production by County in the Southeast
- No. 27 - 1947 Pulpwood Production by County in the Southeast
- No. 29 - 1948 Pulpwood Production by County in the Southeast
- *No. 35 - 1949 Pulpwood Production in the South (out of print)
- *No. 69 - Pulpwood Production in the South, 1950
- *No. 38 - 1951 Pulpwood Production in the South
- *No. 72 - 1952 Pulpwood Production in the South
- *No. 43 - 1953 Pulpwood Production in the South
- *No. 76 - 1954 Pulpwood Production in the South
- *No. 47 - 1955 Pulpwood Production in the South (out of print)
- *No. 80 - 1956 Pulpwood Production in the South

Other Reports

- Southern Forests as a Source of Pulpwood. Forest Survey Release No. 22
- Southern Pulpwood Production and the Timber Supply. Forest Survey Release No. 24
- Virginia Forest Resources and Industries, 1949. U. S. Dept. Agr. Misc. Pub. No. 681
- The Timber Supply Outlook in South Carolina, 1951. U. S. Dept. Agr. Resource Report No. 3
- The Timber Supply Situation in Florida, 1952. U. S. Dept. Agr. Resource Report No. 6
- The Timber Supply Situation in Georgia, 1956. U. S. Dept. Agr. Resource Report No. 12

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